REPORT OF THE PROCEEDINGS

OF THE

Northumberland and Durham

MEDICAL SOCIETY.

SESSION 1876-77.

NEWCASTLE-UPON-TYNE:
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1877.

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T. M. Greenhow, M.D., Roundhay, Leeds.

NORTHUMBERLAND AND DURHAM

MEDICAL SOCIETY.

THE annual meeting was held in the Library of the Newcastle-on-Tyne Infirmary, on 28th September, 1876, the President (Mr. S. W. Broadbent) in the chair.

The following gentlemen were proposed for election as members:

Bradley, M. M., M.B., Jarrow.
Brown, W. J., M.B., Coxlodge.
Drummond, D. D., M.A., M.D., Northumberland Street.
McDiarmid, J., M.B., Newcastle.
Rowell, George, M.D., Westgate Road.
Smith, James, M.B., Ryton.
Wicks, W. C., M.D., Park Parade.
Williamson, G. E., M.R.C.S., Infirmary.

The SECRETARY (Dr. Byrom Bramwell) read the Annual Report, as follows:—

REPORT OF THE COMMITTEE.

Your Committee have great pleasure in being able to present a highly satisfactory report of the affairs of the Society.

The work done during 1875-76 quite equalled in interest and importance and far exceeded in amount that of any previous session. Sixteen papers were read, sixty-one pathological specimens were exhibited, and sixteen patients were introduced at the meetings.

The list of members also shows a considerable increase, the total number now being 154. During the year, 27 new members were elected. One died, and five resigned. The names of eight have been struck off for the non-payment of subscriptions.

The income during the year, including a balance brought forward of £28 4s. 10d., was £97 1s. 4d. The expenditure was £70 16s. 5d., leaving a balance in hand of £26 4s. 11d. The unpaid subscriptions amount to £16 10s.

Your Committee beg to draw the attention of the members to the large number of unpaid subscriptions, and hope that in future all subscriptions will be paid at the commencement of each session.

An invitation has been received from the members of the South Durham and Cleveland Medical Society to join them in making two excursions during the summer.

Your Committee again find it necessary to direct attention to bye-law 6, viz., That the pathological specimens be *verbally* and *briefly* described.

Your Committee recommend the following addition to the bye-laws: "That the business set forth on the notice paper be completed before any other matters are introduced."

PAPERS.

Dr. ARNISON—Notes on a case of excision of the hip joint.

Dr. B. BRAMWELL—1. Report on a case of hydatids of the liver. 2. Case of Menières disease.

Dr. EMBLETON—What is a generation of men?

Dr. FOSS—Facial or Bell's paralysis.

Dr. GIBSON—Hypertrophy of muscular organs.

Mr. GOWANS—The relation between croup and diphtheria.

Mr. HOPGOOD—1. Strapping the chest in a case of abscess after pleurisy. 2. Case of hydatids of the lung and gall bladder.

Dr. HUME—Ether and chloroform.

Mr. JACKSON—Notes on a case of epilepsy treated by chloral hydrate.

Mr. JEAFFRESON—Notes on two cases of ovariotomy.

Mr MORGAN—Epithelioma.

Dr. J. W. MACDONALD—The pathology of catarrhal pneumonia.

Dr. PAGE—1. Brief notes on a case of severe compound fracture into the ankle joint. 2. Short notes of a case of successful primary amputation of the thigh through the small trochanter.

PATHOLOGICAL SPECIMENS.

Dr. ANDERSON—Three vesical calculi.

Dr. ARNISON—1. Large fatty tumour. 2. Parotid tumour. 3. An entire tongue removed by galvano-cautery.

Dr. BARKUS—Very large vesical calculus.

Dr. BEATSON—1. Epithelioma of the hand. 2. Bones of the ear discharged after scarlet fever. 3. Fractured patella. 4. An excised bursa patellæ.

Dr. B. BRAMWELL—1. Carious disease of the vertebræ. 2. Tumour on exterior of the heart. 3. Hydatid cyst of the liver. 4. Diagrams and microscopical specimens showing the minute structure of hydatid cyst. 5. Extremely atheromatous aorta. 6. Fusiform dilatation of the aorta. 7. Pulmonary apoplexy. 8. Renal calculus in situ. 9. Intracranial tumour pressing upon the cerebellum. 10. Encephaloid cancer of the lung. 11. Cancer of the bladder. 12. Hydatid cyst from the liver spontaneously cured.

13. Microscopical specimen of the head of Tænia Solium. 14. Aneurism of popliteal artery. 15. Extreme calcareous deposit in the mitral valve. 16. Large aneurism of descending thoracic aorta. 17. Coal miners' phthisis. 18. Cancer of the kidney. 19. Fœtus in utero.

Mr. BROADBENT—Cancer of the lung.

Dr. EASBY—Vesical calculus.

Dr. EMBLETON—1. Microscopical specimen of the favus fungus (Achorion Schönleinii). 2. Bursa from a gouty subject.

Mr. FIELDEN—1. Osteo-sarcoma of femur, with microscopical specimens. 2. Microscopical specimen of the head of tapeworm Tænia Medio-canellata

Mr. GOWANS—1. Uterine hydatids. 2. Enlarged gland from a case of peritonitis. 3. Respiratory passages from a case of diphtheria.

Dr. HEATH—1. Naso-pharyngeal polypus. 2. Fibrous tumour of the orbit. 3. Bougie removed from the bladder. 4. Cyst removed from the abdominal wall. 5. Calculus from the urethra. 6. A pistol bullet removed from the head of the woman Charlton, who was murdered at Dinnington. 7. A pistol bullet removed from the head of a person who was killed by a fall some weeks after the receipt of the pistol shot.

Mr. JACKSON—Scirrhus of the breast.

Mr. JEAFFRESON—1. Urinary calculus. 2. Six specimens, some photographs and drawings, illustrative of intra-ocular tumours.

Dr. MACKAY—1. Vesical calculus. 2. An eye ball containing a piece of metal.

Mr. MANSON—Epithelioma of hand.

Mr. MORGAN—1. Parts from a fatal case of intersusception. 2. Congenital enlargement of the thyroid gland.

Dr. MURPHY—Scirrhus of the breast.

Dr. PAGE—1. Abdominal aneurism. 2. Thoracic organs of a woman who was killed by a stab in the chest. 3. Large osteo-sarcoma of tibia.

Dr. PHILIPSON—1. Lardaceous spleen and kidneys. 2. Aneurism of thoracic aorta. 3. A sphygmometer. 4. Syphilitic disease of liver, stomach, and small intestine. 5. Kidneys from a case of uræmia.

NEW INVENTION.

Dr. NEWCOMBE—Circular saw.

PATIENTS EXHIBITED.

Dr. ANDERSON—Case of miners' nystagmus.

Dr. ARNISON—1. Case of staphyloraphy. 2. Case of amputation of the thigh. 3. Case of excision of the elbow joint.

Dr. B. BRAMWELL—1. Two cases of progressive muscular atrophy. 2. Case of empyema treated by free incision. 3. Case of locomotor ataxy. 4. Case of traumatic hemiphlegia. 5. Case of progressive pernicious anæmia. 6. Case of moluscum fibrosum.

Mr. FIELDEN—Boy with enormous enlargement of the penis.

Dr. HEATH—Case of disease of the elbow joint.

Mr. JEAFFRESON—1. Case of cranial injury. 2. Case of granular cataract treated by iredectomy.

Dr. PAGE—Case of severe compound fracture into ankle joint.

Dr. PHILIPSON—Case of aneurism of the arteria innominata.

On the motion of Dr. WICKHAM, seconded by Dr. McDOWALL, the report was unanimously adopted.

The SECRETARY (Dr. Bramwell) then read a letter which had been received from the Hon. Sec. of the South Durham and Cleveland Medical Society, asking the members of the Northumberland and Durham Medical Society to join the members of the South Durham and Cleveland Medical Society in making two summer excursions, one to be held in the County of Durham, the other in the County of Northumberland.

On the motion of Dr. DENHAM, seconded by Dr. McDOWALL, it was resolved to accept the invitation of the South Durham and Cleveland Medical Society, and to make one united excursion during the summer. It was suggested that the excursion should be held alternately in the counties of Durham and Northumberland.

On the motion of Dr. BURNUP, seconded by Dr. WICKHAM, Mr. Dodd was re-appointed paid Secretary for the ensuing year.

Dr. Page and Mr. Hawthorn were appointed Scrutineers of the ballot papers for the election of officers, and reported the result as follows :—*President*—G. B. Morgan. *Vice-Presidents*—L. Armstrong, M.D., S. W. Broadbent, M. Burnup, M.D., J. Hawthorn. *Secretary*—Byrom Bramwell, M.B. *Committee*—H. E. Armstrong, W. C. Arnison, M.D., C. Carr, J. S. Denham, M.D., J. W. Eastwood, M.D., J. Frain, M.D., G. H. Hume, M.D., F. Page, M.D., G. H. Philipson, M.D.

A vote of thanks was unanimously awarded to the Scrutineers.

NORTHUMBERLAND AND DURHAM

MEDICAL SOCIETY.

THE first monthly meeting was held in the Library of the Newcastle-on-Tyne Infirmary, on Thursday, October 12th, 1876.

Mr. BROADBENT, the retiring President, said: My last official act is a very pleasant and agreeable one. It is to introduce to you my successor—Mr. G. B. Morgan, senior surgeon to the Sunderland Infirmary. From my personal knowledge of Mr. Morgan, I have every confidence in predicting that he will conduct the business of the Society with dignity, ability, and assiduity, and that he will show himself well worthy of the confidence you have reposed in him by electing him your President.

Mr. MORGAN then took the President's chair, and said: Mr. Broadbent and Gentlemen,—My first duty and pleasure is to thank the members of the Society very warmly for the honour they have done me—an honour unexpected, unlooked for too, and undeserved. When I consider the growing importance of the Northumberland and Durham Medical Society, and remember how wisely and how well it has been presided over for so many years, I accept the honour with much diffidence, and trust to the kind indulgence of the members to excuse my many shortcomings. It is, I think, impossible to exaggerate the importance or the usefulness of the Society. It gathers together the facts and cases of interest occurring throughout an extended area and in the practice of a great number of different men. It brings these facts and cases here to be analysed and discussed, and compared with similar or contrasted cases of interest in the practice of others. It teaches us all to educate our powers of observation and thought; and, last but not least, it affords us a means whereby the members of the profession can become acquainted with each other. I look forward with confidence to the ensuing session being a successful and pleasant one; and as one essential to the success of our meetings lies in each member condensing what he has to say into the fewest possible words, I will set the example of brevity, and no longer occupy our valuable time further than again to thank you for the honour you have done me in electing me your President.

Dr. EASTWOOD proposed a vote of thanks to the retiring President, Mr. Broadbent, and said it was unnecessary to say many words in support of the motion. Mr. Broadbent was so well known and so highly respected by the members of the Society, both old and young, that they two years ago elected him their President. Of the way in which he had filled the chair it was impossible to speak too highly. The Society had truly prospered under his care. He thought it was a great honour to Mr. Broadbent that he, a plain country practitioner, had conducted the business of the Society with so much regularity and ability.

Dr. ARNISON seconded the motion, which was carried by acclamation.

Mr. BROADBENT, in reply, thanked Dr. Eastwood for the very kind way in which he had proposed the motion, and said he felt very much gratified and flattered by the way in which it had been received by the members of the Society. His duties had been most pleasant and agreeable. He had met many old friends, and made many new ones. It was a great satisfaction to him to know that the prosperity of the Society had continued during his term of office.

The following gentlemen were elected members of the Society :—

Bradley, M. M., M.B , Jarrow.
Brown, W. J., M.B., Coxlodge.
Drummond, D. D., M.A , M.D., Northumberland Street.
McDiarmid, J., M.B., Newcastle.
Rowell, George, M.D., Westgate Road.
Smith, James, M.B., Ryton.
Wicks, W.C., M.D., Park Parade.
Williamson, G. E., M.R.C.S , Infirmary.

The following gentlemen were proposed for election as members:—

Buttercase, Robert, M.B., C.M., Dudley.
Fenwick, John C. J., M.A., M.D., Durham.
McGowan, J. Stewart, L.R.C.R., Edin., Durham.
Taylor, John W,, M.B., C.M., Gateshead Dispensary.

PATHOLOGICAL SPECIMENS.

Dr. ELLIS showed a large tumour of the uterus which he had removed *post mortem* from the body of a patient aged 53 years, and said : The tumour was first observed eight years ago. It gave the patient very little trouble until the cessation of the menses, when it took on active growth. The patient had resided for some time at the Woodhall Bromo-Iodine Spa. Under that treatment the tumour diminished considerably in size. The improvement

was, however, only temporary. The patient died, exhausted by the repeated attacks of hæmorrhage and pain. Dr. Bramwell had very kindly examined the tumour, and had pronounced it to be a "fibroid." (A section of the tumour was shown under the microscope.)

Dr. Arnison showed a large cyst which he had removed from the thigh of a man, aged 22. It had grown since he was eight years of age. Tapping and injecting iodine were tried before operating. At the first tapping 130 ounces of fluid thickly charged with plates of cholesterine were drawn off. The sore filled after each tapping, and excision was decided upon. The cyst was dissected out from its position on the inner and upper part of the thigh. No deep attachments were found, except to the ascending ramus of the ischium, from which it appeared to spring. From this it was removed by the ecraseur. The operation and subsequent dressings were conducted under antiseptics, and the patient was recovering.

Dr. Arnison also showed a specimen of enchondroma of the testis, which he had removed from a patient in the Infirmary. The chief symptoms had been weight, enlargement, and stony hardness of the organ. The vessels of the cord were separately tied with catgut ligatures, and the ligatures and cord were left in the canal. Antiseptics used as in the last case. The patient had done well.

A microscopic preparation of cholesterine from the cyst and a section of the tumour, prepared by Dr. Bramwell, were exhibited.

Dr. Philipson exhibited a heart illustrating insufficiency of the mitral orifice. The patient, a woman, aged 38, had been admitted into the Newcastle-upon-Tyne Infirmary, on September 28, 1876, with œdematous lower extremities, and suffering from great dyspnœa and depression, the surface of the body being cold. Upon physical examination, a low-pitched murmur was heard with the first sound of the heart, of greatest intensity a little within and below the left nipple, and the cardiac dulness was increased to the left. Notwithstanding the administration of the carbonate of ammonia mixture and brandy, and the application of warmth to the surface, she died thirty hours after admission. At the autopsy, the pericardium, pleuræ, peritoneum, and the areolar tissue generally, were found to contain yellow serosity. The heart was greatly enlarged, and weighed one pound and six ounces. The aortic, pulmonary, and tricuspid valves were healthy. The mitral valve was rigid; the left auriculo ventricular orifice was dilated, and readily admitted the passage of four fingers. The cavity of the left ventricle was considerably dilated, and the walls of the heart generally were thickened, especially the left ventricle.

The liver and kidneys were congested. The specimen was an example of lesion of the mitral valve, admitting of regurgitation and impairing the action of the heart, and producing the condition of dilatation with hypertrophy of the left ventricle. Dr. Philipson stated that, of eighteen cases admitted into the Newcastle-upon-Tyne Infirmary, under his care, at the reception on September 28, 1876, six patients were suffering from cardiac disease.

Dr. Byrom Bramwell exhibited an aneurism of the thoracic aorta, and said: He was indebted to his friend, Dr. Peart, of North Shields, for the specimen. The patient, a man æt. 45, had suffered for two years from the disease. He died from laryngeal spasm. The aneurismal tumour involved the whole of the transverse portion of the aortic arch. There was a small opening from the sac into the trachea. As Dr. Peart was present, he would not occupy the time of the Society with any further remarks.

Dr. Peart said: He was unable to give any detailed account of the case, for he had only been called to see the patient the day before his death. He was then suffering from great laryngeal dyspnœa, and it was thought necessary to perform the operation of tracheotomy. This procedure was not attended by any benefit, and the patient died apparently from asphyxia. A fortnight before his death he had spat up a considerable quantity of bright florid blood. The sac of the aneurism was filled with tough laminated clot, and this had apparently plugged the opening into the trachea, and prevented further hæmorrhage.

EXHIBITION OF PATIENTS.

Dr. B. Bramwell introduced:—1. A patient who presented an enormous varicose enlargement of the superficial veins of the abdomen. The man, a coal miner, aet. 45, enjoyed good health until six years ago, when he suffered from tertiary syphilitic ulcerations in various parts of the body. About the same time he was seized with severe pain in the lower part of the abdomen. The pain continued for three days. After it disappeared, his left leg and foot began to swell, and reached an enormous size. After six months the swelling of the leg and foot disappeared. During this period the superficial abdominal veins on the right side became enormously enlarged. About a year ago the veins in the right groin also became affected.

2. A man, æt. 33, suffering from leucocythæmia. The patient, a plasterer by trade, had been ill a year. He was very anæmic. The spleen was very much enlarged, occupying the greater part of

the left side of the abdomen. The blood contained an excessive number of white corpuscles.

(A specimen of blood was exhibited under the microscope; the white corpuscles were as numerous as the red.)

In reply to Dr. Drummond, Dr. BRAMWELL stated the treatment had consisted in the administration of quinine, gr. xx. t. d. arsenic, iron, and salacin. The question of removal had been considered, and if the patient did not improve, and was willing to submit to the operation, Dr. Arnison had expressed his willingness to excise the organ.

ON CERVICO-OCCIPITAL NEURALGIA.

By G. H. PHILIPSON, M.A., M.D., Cantab. ; F.R.C.P., Lond.

There is a class of complaints in which the nervous system is the part principally interested, the deviation from the natural state being manifested chiefly in the function of sensation, the powers of thought and of voluntary motion being scarcely affected, or not influenced at all ; disorders in which, the sensibility is perverted and augmented ; cases of nervous pain. The pain is confined ordinarily to one nerve or a nervous branch, and comes on in paroxysms having distinct exacerbations and intermissions, or it may be lasting, becoming exalted from time to time, and then producing remissions. To these nervous pains the generic term of neuralgia has been given.

The most frequent seat of neuralgia would appear to be about the head, and a characteristic case of such will be recounted.

William P., aged 46, married, a cartman, living at Byker, was admitted as an in-patient at the Newcastle-upon-Tyne Infirmary, under my care, August 3rd, 1876.

He stated that for eighteen months he had suffered severe pain in his head, and that during that period of time he had been under the care of several medical gentlemen, and had been unable to follow his occupation. At the outset, there had been numbness more than real pain ; latterly, he had never been actually free from pain, and suffered constantly at times much more than at others, when the least touch would drive him almost "wild," and it was an "agony" to him even to brush his hair. The pain was increased by exposure, and was worse at night. When asked precisely as to the position of the pain, he placed his finger on the occiput, nearly on a level with the pinna of the ear. When pressure was made at the situation denoted, the suffering was intense and distressing. If anything, the pain appeared to be more severe on the right side. In the paroxysms the pain darted from the occiput to the upper part of the back of the neck, anteriorly to the face, and occasionally downward to the shoulder. Upon carefully testing the sensibility of the surface, the right side of the head was found to be less sensitive than the left. He was a strong, robust man, and was well nourished. He admitted that he had suffered from syphilis twenty years ago, for which he had been mercurialised.

This case was regarded as one of cervico-occipital neuralgia, the nervus occipitalis major being the nerve more especially influenced. This diagnosis was come to, from the position of the pain, from the patient's complaining of a continuous dull pain, associated with attacks of very severe, lancinating pain, shooting in various directions, and from the well-defined tender spots (points douloureux),

corresponding to the spot where the nervus occipitalis major perforates the complexus muscle, and becomes subcutaneous.

When questioned respecting the treatment that had been employed, he produced prescriptions for quinine, arsenic, perchloride of mercury, perchloride of iron, carbonate of iron, iodide of potassium, bromide of potassium; and stated that the croton oil liniment, and several fly blisters had been applied, that a seton had been inserted in the nape of the neck and allowed to remain for three months, that galvanisation had been employed daily for two months, and that he had been an inmate of the Prudhoe Memorial Convalescent Home for six weeks, during which time he had had the warm sea water baths three times each week. Excepting when he was taking the iodide of potassium, he had not experienced any relief. In his own words, "The pain was becoming worse instead of better." After taking the iodide of potassium for about two weeks, it had to be discontinued, in consequence of the nasal irritation, the heat and pain at the epigastrium, the vomiting, and the feverishness which it occasioned.

Upon reviewing the treatment that had been employed, and regarding the syphilitic history, especially the nocturnal exacerbations of the pain, it was determined to select a nervine remedy that had not yet been administered, and with this view the bromide of ammonium was chosen, and was commenced in doses of twenty grains in the infusion of quassia three times each day.

August 12th.—The pain was still very severe. The bromide of ammonium was increased to thirty grains, and the ointment of veratria was ordered to be rubbed in around the tender points night and morning.

August 19th.—The pain was still agonising. The bromide was increased to forty grains, and the veratria inunction was continued.

August 26th.—The paroxysms of pain were excessive. Considering that no relief had been obtained by the administration of the bromide of ammonium for three weeks, regarding the syphilitic history as of importance, and looking upon the anæsthesia of the right side of the face as explicable, upon the supposition that the transmission of the nervous impression was lessened by swelling of the nerve from serous effusion, the consequence of neuritic congestion, the possibility of good being effected by absorbent remedies was favourably entertained; consequently, five grains of the iodide of sodium, in combination with twenty grains of the bromide of sodium in the infusion of quassia, was prescribed in the place of the bromide of ammonium, and the veratria inunction was discontinued.

September 2nd.—The patient expressed himself as much easier, and stated that during the last two days there had been more soreness than actual pain. The iodide of sodium was increased to seven grains, and the bromide of sodium to twenty-five grains.

September 9th.—The pain was much diminished. The iodide was increased to ten grains, and the bromide to thirty grains.

September 16th.—For the last three days, has been almost free from pain. The iodide was increased to twelve grains, and the bromide to thirty-five grains.

September 23rd.—Now no pain. No tenderness at occiput. No painful spots. The iodide was increased to fifteen grains, and the bromide to forty grains.

September 30th.—Has experienced no pain or tenderness for the past two weeks. Of his own accord, asked permission to return to his home to resume his occupation.

The chief points of interest in this case are comprised in the etiology and in the treatment.

The usual predisposing cause of neuralgia, anæmia was absent; while, on the contrary, the patient was full-blooded and strong.

The clear history of syphilis was important. But there was no local lesion, such as exostosis, periostitis, or nodes, or any evidence of an organic change of the nervous centres or of the osseous structures, traceable to this constitutional condition. In the absence of such, the probability of the neuralgia being dependent upon neuritis was strengthened. It is perfectly inexplicable, however, why a very circumscribed nerve tract was alone influenced.

Upon the hypothesis of the presence of neuritis, remedies possessing an alterative and an absorbent action were selected. The salts of sodium were preferred to those of potassium, on account of the previous non-toleration of the iodide of potassium, and of the less alkalising effect upon the blood of sodium, and so depressing the system generally in a smaller degree. From the previous iodism a very gradual augmentation of the dose of the iodide of sodium was necessitated.

Associating the symptoms with the rapidity and the completeness of the recovery, it is fair to infer that the neuralgia was dependent upon neuritis, and not upon organic anatomical change.

Dr. Gibson said: I have listened with great interest to Dr. Philipson's paper. A similar case has lately occurred in my own practice. The patient, a robust full blooded man, had suffered for years from the most intense neuralgia in the occipital region; pressure over the part gave rise to the most intense suffering, and caused regular convulsive action. The patient had been treated by many eminent medical men without deriving the slightest benefit. I at once recognised the nature of the case, and came to the conclusion that it was caused by neuritis. I accordingly adopted a strictly antiphlogistic treatment. I applied leeches over the painful spots, gave him purgatives, tartar emetic, and fomented the part with warm water. At the end of 48 hours, he was quite

free from pain. He was then treated with tonics, and in a few days was perfectly well.

The PRESIDENT (Mr. Morgan): Both cases were most interesting It was often very difficult to distinguish such cases from cases of so-called spinal irritation. He thought the subject of spinal irritation was still very obscure, and required more investigation.

Dr. EASTWOOD said he had listened with special interest to Dr. Philipson's paper, for he himself had suffered for 28 years from neuralgia. He had tried many remedies, but had found all useless. The only thing which did him good was rest and sleep. The pathology of some forms of neuralgia was very obscure. He thought there was here a large field for inquiry open.

Dr. DRUMMOND said he would recommend to the last speaker a paper by Dr. Foot, of Dublin. It appeared in the last number of the *Dublin Journal of Medical Sciences*, and contained many useful hints. He would like to ask Dr. Gibson whether in his case there was anæsthesia or hyperæsthesia. It had been recently stated by a German observer, that in chronic cases, such as Dr. Gibson's, anæsthesia was present, but in recent cases, as Dr. Philipson's, the condition was one of hyperæsthesia.

Dr. GIBSON said in his case, which was a very chronic one, there was marked hyperæsthesia.

Dr. PHILIPSON, in reply, said he had been much pleased by the remarks of the various speakers. He fully agreed with Dr. Gibson as to the importance of "tender spots" in these cases. He agreed with the opinion expressed by Dr. Drummond, that in recent cases the condition was that of hyperæsthesia; in purely chronic cases that of anæsthesia

NOTES OF TWO CASES OF RENAL TUMOUR.

By BYROM BRAMWELL.

Mr. President and Gentlemen,—Renal tumours are amongst the rarities of medical practice. I hope, therefore, the following brief notes of two cases which have occurred in my hospital practice may not be uninteresting to the members of this Society:—

Case I.—*Large Solid Tumour of the Left Kidney. Death. Autopsy.*

Robert Fish, æt. 49, a coal miner, was admitted under my care on the 22nd October, 1874, suffering from an abdominal tumour.

Previous History.—The patient stated that when thirty years of age he had an attack of rheumatic fever, but that with this exception he enjoyed good health until three years ago, when he began to suffer from dyspepsia and hæmaturia.

For three months he passed large quantities of blood. It was generally equally diffused through the urine, but on several occasions clots became impacted in the urethra, and had to be drawn out by the fingers.

Eighteen months ago he noticed a lump the size of an orange in the left side of the abdomen. Since that date the tumour has gradually increased in size, the urine has from time to time contained blood, and he has occasionally suffered from severe pain along the course of the left ureter.

Family History.—Particularly good.

State on Admission.—He looked ill, and was much emaciated. A large dense, weighty tumour occupied the left side of the abdomen. It extended inferiorily to within an inch of the left anterior superior iliac spine; internally, to within an inch of the umbilicus; posteriorily, quite to the spine.

It exactly corresponded in shape to an enormous kidney. Its anterior edge was ill-defined and deeply notched. Its inferior margin round and smooth. Its surface slightly irregular.

It could be handled freely without causing pain or uneasiness.

There was faint resonance over the inner or umbilical half of the tumour. Elsewhere there was absolute dulness and great resistance on percussion. There was also dulness over the lateral aspect of the left chest, as high as the level of the nipple. This thoracic dulness was continuous with that of the tumour.

On auscultation a soft systolic murmur could be heard over the greater part of the tumour.

The urine was scanty, high coloured, acid, sp. gr. 1022. It contained a trace of albumen, and deposited a copious sediment, which, on microscopical examination, was found to consist of amorphous

urates, phosphates, pus corpuscles, round and squamous epithelium cells.

The blood was normal.

The pulse and temperature were normal, the appetite poor, the tongue clean, the bowels regular.

A faint systolic murmur was audible at the cardiac apex. The pulmonary sounds were very slightly accentuated. The patient complained of shortness of breath on exertion and palpitation. The size of the heart was normal.

The cardiac murmur was quite distinct from that heard over the tumour.

Pain on movement, both active and passive, was complained of in the knees, elbows, and shoulders. The metacarpal joints of both hands were thickened and deformed.

The Diagnosis was a solid tumour of the left kidney.

The treatment consisted in the administration of acids, iron, quinine, and a liberal diet.

Subsequent Progress of the Case.—On November 24th, there was a slight attack of hæmaturia.

On December 20th, the patient was discharged, improved in respect to his general health, in *statu quo* as regards the tumour.

He died at his own home about a year afterwards. This large solid tumour which, through the kindness of Dr. Heath, I am enabled to show it you this evening, was removed *post mortem.*

Remarks.—The diagnosis in this case was arrived at without difficulty. In some cases, however, it is by no means easy to distinguish an enlarged left kidney from a tumour of the spleen.

The points which should be attended to in forming an opinion are :—

1st. *The Relation of the Tumour to the Descending Colon.*—Tumours of the left kidney are overlapped by this portion of the gut; hence, when it is distended with flatus, there will be resonance over the tumour. In the case of the spleen, the tumour covers the gut, and, is, therefore, uniformly dull on percussion.

2nd. *The Mobility of the Tumour.*—An enlarged spleen is much less firmly fixed than an enlarged kidney, and moves with inspiration and expiration.

3rd. *The Relation of the Tumour to the Spine.*—The kidney tumour goes back right to the spine; the splenic tumour is separated from the spine by an interval, which varies in size with the size and extent of the tumour

4th. *The Characters of the Anterior Border of the Tumour.*—The anterior border of the splenic tumour is sharper and much better defined than the anterior border of an enlarged kidney. The anterior border of an enlarged spleen presents one or more well-marked superficial notches. When the renal tumour, as it did in

this case, presents a well-marked notch corresponding to the hilus of the organ, the notch is much larger, less sharply defined, and more deeply situated.

5th. *The Condition of the Urine and the Previous History of the Case.*—In the case of renal tumours, the urine often contains pus and blood. Where the tumour is of a carcinomatous character, there is very generally a history of hæmaturia.

The Condition of the Blood.—In the case of an enlarged spleen, the blood will often be found to contain an excess of the white corpuscles.

CASE 11.—*Large Cystic Tumour of the Left Kidney. Aspiration. Recovery.*

James Taylor, aet. 10, was admitted on 30th March, 1876, complaining of vomiting and a swelling in the left side of the abdomen.

Previous History.—His mother stated that the lump was first noticed four years ago. It was then about the size of an orange, and was situated in the upper and left side of the abdomen. Since the tumour was noticed his general health has been very good, but he has suffered from periodical attacks of vomiting. These attacks used to come on once a month, and usually lasted three days at a time. Latterly they have been more frequent. The vomiting occurred about ten minutes after taking food, and the vomited matters consisted of food mixed with green bile.

Lately the tumour has increased considerably in size. It has never been painful.

He has been for three years in Newcastle; before that he lived in Ireland.

The Family History was excellent.

State on Admission.—The patient was a well-developed, healthy-looking lad. On examining the abdomen, a prominence was seen in the left hypochondrium. Or palpation the prominence was found to be caused by a large tumour, the limits of which were as follows:—

Inferiorily, it extended to within an inch and a half of the left anterior superior iliac spine; internally, to the umbilicus; posteriorily, to the spine.

The surface was smooth and elastic. It was most prominent in the left hypochondrium. Its inner border, which was anything but sharp, presented a well-marked concavity, exactly resembling the hilus of an enlarged kidney.

An indistinct feeling of fluctuation was perceived in the prominent part of the tumour. There was no hydatid fermitus.

On percussion there was dulness in the left infraxillary, hypochondriac, iliac, renal, and upper half of the lumbar regions.

The blood was normal.

The urine was pale in colour, neutral, sp. gr. 1020. It contained a trace of phosphates, but no albumen.

The other organs and systems were natural.

The pulse and temperature were normal.

The Diagnosis was a cystic tumour of the left kidney, probably hydatid.

Treatment.—On April 4th chloroform was administered, and the most prominent part of the tumour punctured with the pneumatic aspirator. 32 ounces of fluid were withdrawn. The fluid was very pale in colour, neutral, sp. gr. 1008. It contained $\frac{1}{8}$th albumen, abundant chlorides, distinct traces of urea and uric acid. The sediment which was very copious, was found to consist of blood corpuscles, lymphoid cells, large round cells about the size of renal epithelium, cells containing reddish brown granules, and an amorphous deposit resembling urates.

After the fluid was withdrawn the tumour completely disappeared.

Subsequent Progress of the Case.—The patient never had a bad symptom. On April 6th it was noted that he was quite well. The urine on that day was strongly acid, pale yellow colour, sp. gr. 1022. It contained a trace of albumen, and on microscopical examination the deposit was found to consist of pus and blood.

On April 13th the patient was discharged. He presented himself several times afterwards as an out-patient, and when last seen in July there was not the slightest indication of any return of the tumour.

In reply to Dr. Newcombe, Dr. Bramwell stated there was no history or evidence of any obstruction of the ureter leading from the enlarged kidney.

CEREBELLUM AND SPINAL CORD FROM A CASE OF CEREBRO-SPINAL MENINGITIS.

By F. PAGE, M.D.

Dr. Page said:—I have here, Sir, a cerebellum and spinal cord, which, now that the business upon the paper is disposed of, I shall be glad if you will kindly allow me to exhibit. They were taken this morning from the body of a boy, aged eight years, whom I saw for the first time September 6th, and who, his parents told me, had been ill for about a week with vomiting, pain in the head, debility, and remittent attacks of fever. I ascertained there had been and still was a slight running from his left ear, and saw a small abscess over the left mastoid process discharging freely, which had been noticed some fourteen days. The lad was in bed, his tongue was clean, bowels confined, the belly slightly distended and tender. There was a sufficiently well marked internal squint on the right side; he was vomiting his food, and there was nowhere any eruption. A few days after my first visit, I was asked to see in the same house a sister of A. G., aged nine years, and gathered she had been out of health for some little time. She had a small discharging wound in the palm of the hand, and iodine had been applied to her knee for some pain and swelling there. She vomited her food, had remittent attacks of fever, pain in the head, a clean tongue, constipation, and a well marked rose-coloured rash, which I could not distinguish from that of enteric fever. These symptoms continued for about a fortnight, when she became comotose, and died in ten days. Before death her left side was paralysed, the sphincters relaxed, and she had twitching movements on the right side. A *post mortem* examination revealed a sodden condition of brain, obliteration of the sulci on its surface, effusion into the ventricles and great vascularity of the membranes, particularly at the base, with softening of the commissures and parts in their neighbourhood. Upon the surface of the arachnoid, especially at the base of the brain, were a number of small tufts, which Dr. Bramwell, the pathologist of the Newcastle Infirmary, said were decidedly tubercular. The boy seemed to improve gradually, and was able to take solid food, till one morning, about five weeks after the commencement of his illness, he was found very weak, low spirited, and complaining of pain and stiffness in the muscles at the back of his neck. The head became drawn back till the occiput rested between the shoulders, the spine was rigid and arched, the boy resting upon the palms of his hands and his belly, and complaining of excruciating pain over the sacrum. This condition of intense suffering lasted for ten days, when death occurred, the boy being sensible to

the last, and without any symptom of paralysis. On a *post mortem* examination a layer of pus was found spread over a space the size of a shilling on the inferior surface of the cerebellum. The abscess over the mastoid process did not communicate with any dead bone; the mastoid cells contained no pus. The auditory nerve was swollen and pinker on the left than on the right side, but no extension of disease could be traced from the ear to the membranes of the brain, which, in this instance, showed no sign of inflammation, Beneath the membranes of the spine was a large collection of pus and thin puriform matter, communicating with an abscess in the substance of the cord at its lower part. Dr. Bramwell and Dr. Drummond, who kindly saw the children several times and attended the *post mortem*, said this pus was not tubercular in character. With the exception of some enlargement of the mesenteric glands, no disease was found in the abdomen or thorax of either child. Neither had ever had a rigor nor sweats, and in each there was a discharging wound. Without entering into any disquisition as to the nature of the disease from which these children suffered, I would point out how arbitrary and unsatisfactory is the distinction made by morbid anatomy between diseases essentially the same in their clinical history, as illustrated by the cases cited. As far as I can form any opinion, these children died from one and the same disease. They were brother and sister, remarkably alike in all respects, habit, disposition, and appearance; and yet, without being able to say what is and what is not tubercle, the one child is said to have died of tubercular and the other of non-tubercular disease.

Dr. B. Bramwell said he had watched with great interest the cases which his friend Dr. Page had so well described. The point of special importance was the diagnosis. When first seen the boy was apparently suffering from meningeal irritation, the resnlt of an extension inwards of the mischief going on in the petrous portion of the temporal bone. When the girl took ill this diagnosis was shaken, for she was apparently suffering from typhoid fever. This diagnosis was arrived at from the general features of the case, and especially from the characteristic abdominal eruption. When symptoms of spinal meningitis occurred in the boy and coma in the girl the diagnosis was again changed, for it was thought that the two cases depended upon one and the same cause —viz., epidemic cerebro-spinal meningitis. After the *post mortem* on the girl, the original diagnosis in the case of the boy was adopted.

Dr. Drummond said one point of great importance was the fact that there was no paralysis in the boy's case, in spite of the large collection of pus in the lower part of the spinal cord.

Dr. GIBSON thought the connection between the two cases was accidental. In his opinion, the disease in the boy resulted from the abscess of the mastoid process.

Mr. BROADBENT said he had seen several cases of epidemic cerebro-spinal meningitis in Dublin, when the British Medical Association met there. In those cases the eruption was like that of typhus.

Dr. BRAMWELL, in reply to Mr. Broadbent, said in many cases there is no eruption, and in some, though very rarely, the eruption is identical with that of typhoid. As a rule, however, the eruption resembles typhus.

NORTHUMBERLAND AND DURHAM

MEDICAL SOCIETY.

THE second monthly meeting was held in the Library of the Newcastle-upon-Tyne Infirmary on November 9th, 1876. The President (Mr. Morgan) in the chair.

The following gentlemen were elected members of the Society:—

Buttercase, Robert, M.B., C.M., Dudley.
Fenwick, John C. J., M.A., M.D., Durham.
McGowan, J. Stewart, L.R.C.P., Edin., Durham.
Taylor, John W., M.B., C.M., Gateshead Dispensary.

The following gentlemen were proposed for election:—

Barron, James, M.R.C.S., Sunderland.
Barron, T. W., B.A., M.B., Cantab., Newcastle.
Blumer, W. Percy, L.R.C.S., L.R.C.P. (Edin.), Sunderland.

PREVALENT DISEASES OF THE DISTRICT.

Mr. HENRY E. ARMSTRONG presented the following:—

Return of Admissions to, and Deaths at, the Newcastle Fever Hospital, from March to October, 1876, inclusive.

	Admissions.									Deaths.
	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Total.	April.
Typhus	2	5	...	...	1	1	...	2	11	2
Enteric Fever	...	1	...	2	...	1	1	5	10	...
Simple Continued Fever	...	1	1	...	...	...	...	...	2	...
Scarlet Fever	1	...	...	...	1	1	...	2	5	...
Smallpox	...	...	1	1	...	...	...	...	2	...
Inflammatory Sore Throat	1	...	...	...	...	...	...	...	1	...
Totals	4	7	2	3	2	3	1	9	31	2

PATHOLOGICAL TRAY.

Dr. HUME exhibited—1. Two vesical calculi which he had removed by lateral lithotomy, and said: The smaller one was from a boy, æt. 19. The larger one, which was a beautiful specimen of the mulberry calculus, was from a man, æt. 29. At one end of it a small portion was awanting. This portion had lodged in the membranous portion of the urethra, and was detected there by the sound.

2. A loose cartilage from the knee joint. It was of unusual size; one side of it was composed of bone, the other of cartilage. Attached to the cartilaginous side was a fringe of membrane which suggested the idea that the cartilage itself had been formed in a synovial fringe. It had been removed by direct incision under antiseptic precautions. The case had done well; the temperature had never been above 100° F. There had been a copious non-purulent effusion into the joint, but, with this exception, no departure from perfect health.

Dr. WICKS showed four gall stones which had been removed, *post mortem*, from a patient who was under the care of Dr. Ellis. There had been no symptoms of hepatic derangement.

Dr. HEATH said that he had recently met with several interesting examples of disease about the jaws and face requiring operation, which might be well exhibited together, as they illustrated different varieties of disease growing in somewhat similar positions, and presenting points of agreement and contrast.

1. Right side of lower jaw, removed from a boy aged six. Nearly the whole of the right side of the jaw is occupied by one large cyst. The external shell is very thin, and within is an exceedingly tough, strong membrane, the membranous cyst wall. When the cyst was first laid open a yellowish slightly glairy fluid flowed from the incision The cyst is now only occupied by a thick fleshy mass, which is in some places tough, in others soft. On the inner aspect of the preparation corresponding to the interior of the mouth is the remains of another cyst, which was laid open during life nearly two years previous to the removal of the jaw. The same glairy fluid flowed from this cyst. It now presents thick everted edges, which at the time of the operation had a very malignant appearance.

Sections of the solid mass, placed under the microscope, exhibit near the surface where covered by cyst wall a fibrous construction, and towards the central portions, and especially in the softer parts, round cells; there are also some spindle-shaped cells. The predominance of the round cells would induce me to place the solid growth among the round-celled sarcomata. If allowed to continue, it would undoubtedly in the course of time have developed into a large and thoroughly malignant mass.

2. The left upper maxillary bone removed from a young woman of 18. The jaw has been removed entire, and without the malar bone.

The antrum is occupied by a growth moderately firm and consistent as a whole, but presenting a softer portion in front, where the front wall of the antrum is partially eaten through.

The antrum is perfect except at this point and the orbital plate.

The tumour is strongly attached by its whole posterior surface to the inner surface of the posterior wall of the antrum, and seems to have grown from the bony surface. The orbital plate of the maxillary bone was entire at the time of the operation, but has got damaged since by handling.

A section of the growth placed under the microscope exhibits spindle-shaped cells, giant cells, and what seem to be irregular bone elements.

I should be inclined to place the growth in the myeloid species of sarcomata.

3. The hard palate forming the floor of the antrum with the posterior third of the alveolar process of the left upper maxillary bone, from a man of about 65. The mucous covering of the palate and alveolar process presents a beautiful specimen of epithelioma.

A section exhibits under the microscope the peculiar circular or whorled nests, or, as they are called by writers, concentric globes of epithelial cells.

Two photographs showing enormous distention of the nasal cavities by polypi; a pencil sketch by Dr. Barron exhibiting the enlargement of the nose more strikingly; and the polypi, removed at three sittings, and now occupying two preparation jars. The lowest polypi removed, which had been exposed to the air, were so firm and so much darker coloured and opaque than the ordinary mucous polypi, that at the time I was disposed to think them fibrous, but a microscopic examination, as well as the removal subsequently of true mucous polypi, showed that they were really of the ordinary mucous variety. The older polypi can be distinguished by their colour and general appearance as they hang in the jars.

Sir, I wish also to show to this Society three recent specimens of disease, all removed a few days ago. I shall not occupy time by lengthened remarks.

The first specimen consists of the parts removed in an excision of the ankle joint, the entire astragalus and the joint-ends of the tibia and fibula; these show extremely well, acute softening and destruction of cartilage; the colours are still fresh, and are more brilliant and characteristic than is usual.

The second consists of the articular surfaces of the knee, from a patient whose leg was amputated at the knee joint, for suppuration within the joint, showing a somewhat similar condition.

The third is the head of the femur, and a sequestrum from the acetabulum, removed from a girl of twelve.

These contrast with the former specimens; there is no increased vascularity nor brilliant colouring; the cartilage covering a considerable portion of the head of the bone has been eaten away by chronic ulceration; and the bone surface itself exhibits molecular destruction.

The freshness of these specimens made me desirous of showing them to the Society before the colours faded and other characteristic appearances altered.

Dr. Philipson exhibited—1. A lung consolidated throughout by inflammatory exudation. He stated that at the autopsy, when the sternum was removed, the right lung was not collapsed, but was found filling and forming a mould of the side of the chest, and impressed with the form of the ribs. The surface was covered with recent lymph. The lung weighed 3 lb. and 9¾ oz. Upon section, the entire lung was found to be solid, and in the third stage of pneumonia, that of grey hepatisation or purulent infiltration, the cut surface being marbled, of a granite-like appearance, easily lacerable, but when torn distinctly granular, and when pressed, did not crackle, but from the lower lobe a purulent saneous fluid escaped. When pieces of the lung were placed in water they sank deeply. The left lung was normal. The patient, a man, aged 59, a labourer, who had undergone privation, had been suffering for seven days before his admission into the Newcastle-upon-Tyne Infirmary, October 26th, 1876, and complained of pain in his right side, cough, difficulty in breathing, and weakness. Upon physical examination of the chest, it was found that the right side was dull throughout upon percussion; that the respiration was harsh, blowing, dry, without rales; that the vocal fremitus was greatly increased; and that the vocal resonance was intense—of a metallic ringing character. Notwithstanding the administration of the carbonate of ammonia, spirit of chloroform, infusion of senega, whisky, and the application of warm linseed poultices to the chest, he died three days after his admission. Dr. Philipson presented the specimen as an example of pneumonia of the right lung, the whole lung being affected, the inflammation having proceeded from below upwards.

2. The liver, spleen, and kidneys, illustrating amyloid or waxy degeneration, from a woman, aged 35. The patient had been admitted into the Newcastle-upon-Tyne Infirmary, during January, 1876, and at that time the liver and spleen were enlarged, the lower borders of the former reaching to the umbilical line, but there was no ascites. The hard palate was perforated, there were nodes upon both tibiæ, and she was cachectic. She admitted that

she had led an irregular life, and that she had suffered from "the disease." Regarding the cachexia as syphilitic, the enlargement of the liver and spleen was looked upon as due to amyloid change. She was treated with the iodide of sodium, and after remaining in the Infirmary for two months, was so much better that the returned to her home.

She was re-admitted during September, 1876, when she was suffering from ascites, for which paracentesis abdominis was performed. In October, tapping was again necessitated. Subsequently she was affected with general bronchitis, from which she succumbed on November 3rd, 1876.

At the autopsy the peritoneum, as also the areolar tissue of the liver extremities contained serosity. The liver was firmly adherent to the abdominal wall. The under surface was very irregular. It weighed 4 lb. 10 oz. On section it was pale, firm, and hard, cutting like raw bacon. On the application of a solution of iodine the surface was darkly stained walnut hue. Adjacent to the surface was a dense, white neoplastic tissue. The spleen was firmly adherent to the abdominal wall. It weighed 1 lb. 11 oz. On section it was of a darkish purple hue, very firm, and near the surface there was a dense, white neoplastic tissue. Upon the application of iodine, the splenic structure was deeply stained brown. The kidneys were both enlarged, the right weighed 12 ounces, and the left 11½ ounces. On section the capsules were easily separated, and the surface was very firm, and on the application of iodine, dark brown spots and lines became apparent, contrasting strongly with the simple yellow iodine staining. The intestines were non-adherent to the abdominal wall or viscera. The uterus, ovaries, supra-renal capsules, bronchial and mesenteric glands were normal. The heart was natural. The lungs were œdematous and attached to the chest wall by recent adhesions. Dr. Philipson stated that the liver, spleen, and kidneys typically exemplified amyloid or waxy degeneration. In this case the pathological condition was associated with the cachexia of constitutional syphilis, but the same condition was met with in the cachexia from scrofula, or from prolonged suppuration.

3. A larynx and trachea, with tubercular ulceration, from a man, aged 45, who had been under his care, in the Newcastle-upon-Tyne Infirmary. The epiglottis was eroded, the ulceration on the inferior surface having penetrated to the fibro-cartilage. The vascular network of the mucous membrane of the larynx and trachea was distended, and the mucous membrane was thick and soft, from interstitial effusion, but was not eroded. The lungs were the seat of tubercle, in its various stages, the right being more advanced than the left. There was a history of primary syphilis, at the age of 25, and it was conjectured that the laryngeal condition might be dependent upon deep-seated syphilitic cachexia. The condition revealed at the autopsy, however, rendered such a supposition untenable.

Mr. Henry E. Armstrong exhibited the following pathological specimens from cases of charbonous fever in cattle, viz.:—

1. Heart, showing hæmorrhagic sub-peri-and endo-cardial infiltration.
2. Portion of black, engorged, and disorganised spleen.
3. Two specimens of pyloric extremity of fourth stomach, showing congestion of mucous membrane and sub-mucous hæmorrhagic infiltration in spots and patches.
4. Two portions of duodenum, showing sub-mucous hæmorrhagic infiltration.
5. Blood, drawn after death.

Dr. Ellis showed a fœtal monstrosity from a pig.

Dr. Maclachlan showed some fluid removed by the aspirator from a retro-uterine hæmatocele, and promised to read the notes of the case at the next meeting.

Dr. Byrom Bramwell exhibited a specimen of aneurism of a terminal branch of the pulmonary artery, and said: It is now nearly two years since a very able commnnication on bronchial hæmorrhage was made to this Society by my friend Dr. J. W. Macdonald.

In some remarks which I made on that occasion, I brought before your notice the observations of Dr. Vald Rasmussen. That distinguished Swedish physician records the *post-mortem* examination of eleven fatal cases of hæmoptysis. In eight of these aneurisms, varying in size from a pea to a walnut, were found on terminal branches of the pulmonary artery. These aneurisms were situated in the walls of cavities, and it was by their rupture that the hæmoptysis had taken place. (In the three remaining cases the source of the hæmorrhage was a ruptured aneurism of the aorta.)

Since the appearance of this paper in the *Edinburgh Medical Journal* for 1868, cases have from time to time been described in this country. They are, however, admittedly very rare. I was, therefore, very pleased indeed to come across this beautiful specimen. It was removed from the body of a male patient, æt. 21 years, who was admitted into this Infirmary under the care of my colleague, Dr. Gibson; and I am glad to avail myself of this opportunity of thanking Dr. Gibson for his kindness and courtesy in allowing me to exhibit the specimen.

During his stay in hospital, the man had several attacks of severe hæmoptysis; on one occasion he spat as much as 40 ounces of bright fluid blood.

He died from exhaustion some days after the last hæmorrhage.

The result of the *post-mortem* was as follows:—

The bronchial tubes contained a quantity of fœtid purulent fluid, but no blood. Both lungs were firmly adherent to the chest walls. The apex of the right lung was hollowed out into a cavity the

size of a large orange. The walls of this cavity were ragged and dense, except at the inferior part, where there was a considerable deposit of cheesy material. At the most dependent part of this large cavity, a small aneurism about the size of a bean was found. It was unruptured, of a yellowish white colour, and was situated on a minute branch of the pulmonary artery. It contained a small quantity of fluid blood.

Below the large cavity were several others of smaller size. One as big as a walnut was filled with clotted blood, partly black and recent, partly decolourised and old. The decolourised portion of the clot was firmly adherent to a second aneurism, the size of a cherry. This aneurism had ruptured by a slit-like opening, one-fifth of an inch in length. In the orifice was contained a portion of the decolourised clot already described.

Still lower down and nearer the root of the lung a third aneurism was found. It was the size of a filbert, irregular and sacculated in shape, of a white colour. It was contained in the cavity of a dilated bronchus. The containing cavity was little larger than the aneurismal sac. This aneurism was unruptured, though its wall at one point was very much attenuated. It sprang from a branch of the pulmonary artery as large as a crow quill. The walls of the vessel for some distance before they reached the sac were much thickened. A branch which readily admitted a probe proceeded from the end of the sac furthest removed from the entrance of the afferent vessel.

This aneurism was distinctly divided into two sacs, which, however, freely communicated. On being opened it was found to contain a small quantity of clot of a red colour. This clot was not adherent to the wall of the vessel.

Dr. Philipson said he had, through the kindness of Dr. Gibson, taken charge of the patient for three weeks before his death. He had during that period had three severe attacks of hæmoptysis, one of them nearly proved fatal. The treatment adopted was the administration of one fluid drachm of the oil of turpentine suspended in mucilage. Dr. Philipson said that he had found this drug given in the form specified very efficacious in arresting hæmorrhage.

Dr. Gibson said the patient had been under his care for some time. On his admission he was suffering from a simple catarrh. It was difficult to account for the sudden and profuse attack of hæmorrhage. There were no physical signs of aneurism present during life. No well-marked phthisical symptoms. He thought the case had been a catarrhal pneumonia, with subsequent degeneration of tissue.

EXHIBITION OF PATIENTS.

The PRESIDENT (Mr. Morgan) showed a patient who had been the subject, first, of ruptured popliteal aneurism, and, second, of diffuse femoral aneurism, and said: The patient whom I have the pleasure of showing to the Society this evening, and from whom this aneurism was taken, was admitted into the Sunderland Infirmary in July, 1875. His occupation was that of a labourer, his age 40 years. He was unmarried. He had formerly been a soldier, and had served seven years in India. He had had syphilis on two occasions, but neither time did secondary symptoms follow. His health had been uniformly good. Occasionally he had been a hard drinker.

Two months before admission he began to suffer pain in right leg, and on rising in morning the knee felt stiff. Shortly after this he became conscious of a swelling in the ham the size of a cherry. This increased rapidly, and obliged him to leave off work. He does not assign any cause for it. Latterly his breathing has been short, and, on exertion, difficult.

The right popliteal space was occupied by an aneurism the size of an orange.

The area of cardiac dulness was increased and the apex beat displaced downwards and to the left. The second sound was almost lost in the prolonged musical murmur of the first. This murmur was heard with greatest intensity in mid sternum opposite fourth costal cartilage.

Although a most unfavourable case, pressure was tried by means of horse shoe clamp in the groin, but the pain was so severe that it had to be abandoned.

The tumour increased rapidly, and on August 14 violent pain came on, and the swelling become diffused and the integument inflamed and tender. It was evident that the sac had ruptured. August 18: The limb was amputated through lower third of thigh (long anterior skin flap). The femoral was dilated, but appeared pretty healthy—it, and some other vessels were secured by catgut. Little blood was lost, and he took chloroform well.

This is the aneurism. It is as large as an orange. The popliteal enters it at its upper end, and leaves it two inches further down, the large cavity being thus between the vessel and the joint. Below and in front it is impossible to define the coats of the aneurism, and it was here into the substance of the gashoc nemesis that rupture had taken place.

Third day after amputation.—Edge of flap sloughing.

Eighth day.—Severe hæmorrhage came on (temp. 102·4) controlled by ice and position.

Eleventh day.—Hæmorrhage recurred (temp. 103). The flap was turned up and a mass of clot washed out. The surface of wound

was covered with a stinking slough. Failing to find the bleeding point, a strong solution of perchloride of iron was freely applied, and the bleeding stopped.

Twenty-second day.—The slough has all separated, and the wound looks clean.

Thirty-second day.—The temperature rose to-day to 105·4, in consequence of suppuration burrowing along the course of the vessels.

After this the stump steadily healed; and in December, four months after operation, was quite healed. It was, of course, conical, but he had no pain.

The femoral could not be traced lower than an inch or so below Poupart's ligament—about where the profunda would come off.

He was allowed to rise and move about the ward on crutches.

In the first week of January, he complained much of pain in groin and in stump, sometimes very severe, and worse at night. Morphia relieved it a little.

January 7.—A swelling the size of a split cocoa nut was found in right groin—soft, pulsating, and not easily defined at edges. He says that during night, while pain was very severe, he felt something give way, and the pain became less (temp. 104).

January 9.—The new aneurism increasing rapidly; it extends across the groin, and the integument at one point in the centre has commenced to slough.

January 12.—Slough extending; it is evident that the whole of the skin covering anterior aspect of stump will die.

January 18.—The integument from base of Poupart's ligament to end of stump and round into posterior flap, has sloughed.

A slough is also forming in wall of abdomen between umbilicus and right iliac spine, the size of a crown piece. There is oozing of bloody serum. He is very weak, and appears to be sinking.

January 20.—A line of demarcation has formed all around the sloughs, and there is a little very offensive discharge.

January 25.—Appears to be rallying—takes nourishment freely, slough separating. Very offensive discharge.

January 30.—This morning the slough came away with a little assistance. It forms a triangular piece, the base at Poupart's ligament, the apex at the end of stump, and consists of the entire integument of the front of thigh, the rectus femoris muscle, the artery and the aneurism. The muscles at Scarpa's triangle were left bare, as if cleanly dissected. The femur, black, bare, and dead, protruded from among the red muscles at the apex of the stump, sticking out like a handle. (See Drawing.)

The skin at back of thigh is sound. The slough on abdomen is also separated, leaving a sore the diameter of an orange.

January 31.—Patient much relieved since sloughs came away; fœtor nearly gone; wounds fresh and clean; takes nourishment and sleeps well.

February 3.—There is a channel of communication between wound on abdomen and thigh. The former wound is nearly circular, 3 inches by 3. The latter is roughly triangular, 8 inches by 7 inches, the base at Poupart's ligament, the apex 4 inches from end of femur.

The skin at back of thigh is in good condition. A few days after this date, the projecting bone was sawn off, with as little disturbance of the soft parts as possible. The cancellous structure of the bone when cut into was horribly offensive. Since then, the large surface has slowly but steadily healed, until it has reached the state in which it is shown to the society this evening.

The large wound in abdomen has skinned over, but you can feel and see the coils of intestines moving beneath it, and when the patient stands erect the contents of the belly bulge out underneath the thin covering.

The stump is, as you see, nearly healed; the very large surface left has contracted, and cicatrised until there is only a very small piece around the bone unhealed, and this is fast granulating.

The sudden formation of a diffuse aneurism of the femoral and the simultaneous sloughing of a portion of the wall of abdomen from the cutting off of blood supply through the deep epigastric is interesting.

The wonderful manner in which the sloughs were thrown off, and the fact that the patient survived, is also remarkable.

He is now in better health than since July, 1875, and expresses himself as feeling quite well. But from the state of his aortic valves, we know that his death may be very sudden.

Dr. Hume showed a splendid case of *Icthyosis* in a girl, æt. 10 years. It presented the usual features of the disease as regards position. The patient stated it was congenital.

ANALYSIS OF ONE THOUSAND BIRTHS.

By JOHN T. CLARKE, M.R.C.S., Etc.

Mr. President and Gentlemen,—Statistics on professional subjects, although proverbially dry by word of mouth, are growing in importance, and the knowledge of this fact has induced me, in a very feeble way, to tabulate the result of my first ten years' experience in obstetrics.

As a junior, I shall, in this paper, neither advance nor defend any line of treatment, nor attempt the description of individual cases, but simply try to lay before you what has occurred, what has been done, and what has resulted in one thousand deliveries it has been my fortune to attend.

On any question of detail I shall be most happy to refer to my "Smith's Obstetric Register," which I have here.

I may premise that in this series non-viable births are excluded, and with the exception of some 35 cases attended latterly by my assistant, I am personally responsible for all, having in no one instance engaged further professional aid.

Of the thousand, 113 cases were attended as a student, upwards of 600 in a branch district of the Consett Iron Company, and the remainder in private practice.

TABLE I.—GENERAL ANALYSIS.

No. of Primiparæ.		185	
Males	545	...	Preponderance of males, 103.
Females	442	...	
Sex not stated	13	...	
Mothers died	...	9	6 from puerperal fever.
Still-born	...	32	19 of these putrid.
	1000		

1st, then, in the rough there were 545 males, 442 females, and 13 sex not stated, giving a balance in excess of 103 males. 185 were first confinements, and there were 9 maternal deaths, and 32 lead-born children, 19 of which were putrid.

TABLE II.—PRESENTATIONS.

	No.	How Delivered.	Results to Mother.	Results to Child.
Face	4	Naturally..... 3 Forceps..... ...1	Recovered.	All born alive.
Brow	2	Naturally.	Do.	Do.
Breech	17	Blunt hook once.	Do.	All recovered.
Inferior Extremities	16	.....	Do.	Died from Asphyxia.....2 Putrid (mostly premature)... 5 7
Superior Extremities	10	Version.....9 Arm returned...1 10	Recovery in all.	Died from Asphyxia.....1 Putrid 1 2
Funis	6	Version.....2 (1 fatal)	Recovery in all.	3 Cord cold and pulseless on arrival in 2 cases.
Twins	16	Forceps to second child 1	Puerperal fever on 8th day, easy..1	Premature ... ..1 Putrid.....1 3

NOTE.—There were ten monstrosities, viz.:—Anencephalic, 3; spina bifida, 3; hydrocephalic, 1; hydatid cysts, 1; distortion of bones of skull, 2.

TABLE III.—OBSTETRIC OPERATIONS.

	Nature of Labour or Presentation.	Maternal Deaths.	Deaths in Children.
Version 17 cases.	Transverse..... 1 Placenta prævia 4 Arm, &c. ..... 9 Funis ..... 2 Failure of forceps 1 — 17	Exhaustion from jaundice and vomiting .. .. 1 Metro-peritonitis: called in consultation when very far gone in labour..... 1 — 2	6 2 more or less putrid.
Forceps 60 cases* 4 long and 56 short forceps. 33 primiparous.	Dislocation of hip ..... 1 Convulsions ... 1 Powerless labour.....21 Small pelvis .... 4 Rest various, chiefly from causes associated with the primiparous state.	Post-partem convulsions ... . 1 Puerperal metritis and septicæmia 2 — 3	Funis presentation ..... 1 Compression ... 1 — 2
† Induction of premature labour. (Twice in same patient.)	Woman æt 40, in late pregnancies has had icterus and severe vomiting.	Died 3 hours after second operation, from simple exhaustion, resulting from cholemic poisoning and uncontrollable vomiting.	first time, the child was living, but not "viable;" (5th mo.) second time, dead; (6th mo.)

* Of the 60 children delivered by forceps, only 13 were females.

† For the induction of premature labour, a bougie alone on first occasion; sponge tents (a bundle) and rupture of membranes in addition. Second time: Adherent placenta totally; shoulder presentation; version.

Slight metritis is reported after 3 cases, which, however yielded to treatment. I am ashamed to record in the earlier part of this series two instances of split perinœum, in one extending into rectum.

In the interests of modern medicine, I am happy to say the number of forceps cases is large and may be thus explained:—In a remote branch practice, with a teeming population, a man becomes to a degree a consultant; for if he does not attend *all*, he certainly gets every *bad* case. This was so at Consett Works, where, moreover, the worthy principal, Dr. Renton, has educated the people to their judicious use.

TABLE IV.—COMPLICATIONS, &c.

	No.	How Delivered.	Results to Mothers.	Result to Child.
Adherent placenta	12	.....	All recovered.	...
Hemorrhage — Unavoidable	6 (Four complete placenta prævia Two partial)	Version 4	All recovered.	1 death; called in by midwife.
Hemorrhage — Accidental	13	.....	All recovered.	...
Convulsions	*5	Forceps and Chloroform twice. Bleeding found very advantageous in 3 cases.	1 death, a primipara; fits continuing some hours after delivery.	1 death.
Puerperal fever...	8	Without difficulty in every case; aided by forceps once.	6 deaths, all on 7th or 8th day; illness setting in before 48 hours after delivery; 4 cases within 7 weeks of each other.	...
Mania	1	Natural.	Recovery, after some months.	...
Phlegmasia dolens	2	Natural.	1 recovery in 8 weeks; 1 recovery in 16 weeks.	...

* Classification.—1 before labour, 2 during labour, 2 after labour only.

With your permission, sir, in conclusion, I will make a few brief remarks not inclusive under the foregoing heads.

No case of craniotomy is recorded, although I can call to mind several cases in which it had been performed in previous labours. Had this arisen from timidity of the fullest aid affordable by forceps? At any rate it is a significant fact.

With regard to the other alternative of craniotomy, viz., version, my experience of one case only in which forceps failed was not encouraging, in accordance, I believe, with the view held in the abstract by the Edinburgh School.

The aspirator proved of service as a means of relief, and diagnosis in one fatal case of abdominal gestation.

A case of enteric fever, fatal a month after delivery, its invasion dating from that time, presented a puzzling complication of

symptoms, only cleared up by the tardy appearance of the characteristic rash in the last week of the patient's life.

In a lady who died of phthisis a month after delivery, most alarming effects resulted from the administration of two drachms of ergot in divided doses. There were marked exacerbations of the ergotism, with intense burning and tingling of the mouth and fauces, and cardiac depression, so that at first I thought I had given aconite in mistake. The impression brought from this bedside has made me very distrustful of the tincture as a reliable preparation of ergot.

The saying goes that "position's everything." Now, with regard to position in labour; fashion seems to vary with nationality and place. An Irishwoman will be on her hands and knees, whilst a west-country woman thinks that if on the "chairs" all's right, and, in truth, though obviously unpleasant, this position has its advantages from time to time.

In conclusion, I thank this Society for the forbearance shown towards the maiden effort of one in nowise specially qualified for the subject.

"A column for the curious" might be added as to the percentage of paying cases, and the amount of midnight oil, and very bad whiskey, consumable in the attendance on 1,000 cases, but this, in the interests of humanity, is generally omitted in statistics.

A CASE OF SYPHILITIC HEMIPLEGIA.

By F. W. NEWCOMBE, M.D.

John B., æt. 40, a moulder, married, states that twelve years ago he suffered from primary syphilis and secondary symptoms. He was very unsteady at the time, and never placed himself under treatment. The disease ran a natural course, and after a time he thought himself quite well.

About eight years ago his wife brought her baby to me, suffering from infantile syphilis. I explained the case to her, and questioned her, but she expressed herself as perfectly ignorant concerning the cause, was much astonished, and rather indignant. However, I placed the child under proper treatment and cured it.

I also induced herself to take a course of medicine, as she confessed to frequent sore throats and other secondary symptoms.

Two years ago she brought another baby suffering from syphilis, this child was also cured. Her own health has continued wonderfully well. About this time the husband came first to me, suffering from violent pains in his head, worse at night, ulceration of the cartilages of the nose, with fetid discharge.

I advised him to have a thorough course of medicine, and he continued treatment a short time, received relief from immediate symptoms, and gave up coming.

Time went on, and four months ago, he came back with all the symptoms greatly exaggerated, violent pains in the head, nodes on the temporal and parietal bones, fetid discharge from the nose, giddiness, inability to work, low spirits, &c. He resumed his treatment. A week afterwards, on walking home, he fell down and was unconscious for above a minute. I advised him to stop work, and go into hospital. He was admitted into Sherburn, and improved slightly.

A fortnight afterwards, on his returning home, I noticed the right side of his face drawn to one side, and loss of muscular power on the left, the tongue protruded straight. Three days after he fell down insensible, and remained so two hours. On regaining consciousness, both limbs on the left side were found paralysed and the sensibility much impaired, the speech was faltering, but not confused, the memory clear, sometimes he became a little childish, often bursting into tears, and very despondent.

In considering the cause of this attack, I think we may exclude hæmorrhage, because the attack had been preceded by prodromata of several days' duration, and the heart and vessels, as far as I could make out, were healthy. For the same reason also we may exclude softening from embolism. If there had been softening from inflammation, or encephalitis, we would have had elevation of

temperature continued for some time, but the temperature remained normal.

If a tumour, gummatous or other, had existed, the previous symptoms, I think, would have been more marked. There was no vomiting, no epilepsy. We can only therefore come to the conclusion that the paralysis was caused, either by softening from an indigenous thrombosis, or due to chronic meningitis at the base of the brain, and general exudation about the nerves, at the right side of the medulla and the crus cerebri.

I naturally inclined to the diagnosis of syphilitic encephalopathy.

It is rather extraordinary there should have been no manifestation of acute symptoms during the transitional period, between the advent of the secondary symptoms, and the deeper lesions of the tertiary, which in this case was unusually long.

I was very dubious concerning the prognosis of this case, and not very sanguine of a good result, afraid that the power of re-absorption would be small, that the symptoms would go from bad to worse, and this once vigorous man fall a victim to his own carelessness.

However, I gave him 15gr. doses of iodide of potassium three times a-day, and mercurial inunctions every night. He continued this for four weeks and began to improve, the face not so much drawn, and he could trail his leg slightly, and the appetite good. At the same time he was looking very anæmic, the affected limbs were very œdematous, and the urine strongly alkaline, so I substituted a mixture of perchloride of iron and strychnine with great benefit. In a week he was able to raise the leg slightly, and with the assistance of a stick move across the floor, and also to move the fingers. I ordered him to continue the steel, and also to take 20 grains of the iodide of potassium every morning, and to discontinue the inunctions.

He is still under treatment, and every week shows a gradual improvement, and I hope soon to see him quite restored.

In conclusion, gentlemen, I know of no case so typical of the dreadful results of syphilis allowed to run a natural course, and the absurdity of treating it on what is called the expectant theory, for I feel confident that if this man had followed up a proper course of treatment when first attacked, he would have escaped at least the severe lesions of the sequelæ.

How many valuable lives have been rendered useless and miserable, and in this category I not only include the actual sufferer, but those also into whom he infuses his poisoned blood; how many magnificent intellects have been wrecked, how much suffering has been entailed, because a timorous and unavailing therapeutical course of medicine has been exhibited in the first stages of this disease.

AN OUTBREAK OF CHARBON IN NEWCASTLE-UPON-TYNE.

By HENRY E. ARMSTRONG, M.R.C.S.,

MEDICAL OFFICER OF HEALTH.

The subject of this paper is the appearance of a disease which, so far as I have been able to ascertain, was, before the present outbreak, unknown in Newcastle either in man or among the lower animals, but which has during the past fortnight been fatally prevalent in certain cow-byres and stables in the borough, and has probably caused the death of a human being.

For the diagnosis of the first recognised case, as well as for much other important information and assistance connected with this outbreak I am indebted to Messrs. Stephenson and Elphick, veterinary surgeons.

Before entering on an account of the cases I beg leave to draw attention to the three divisions of Charbon as made by Chabert, and quoted by Professor Williams in his recent work on the "Principles and Practice of Veterinary Medicine," viz. :—

1st. *Essential Charbon*, or malignant pustule, a disease characterised by external tumour the result of inoculation and unpreceded by fever.

2nd. *Symptomatic Charbon*, in which there is a general morbid state, succeeded by an external tumour.

3rd. *Charbonous Fever*, a rapidly fatal disease without any manifestation of external tumour, and characterised by excessive engorgement of the spleen and other organs and tissues.

It is with the third division—*i.e.*, *Charbonous or Splenic Fever*—that we have to do, and the manner in which the cases came under observation was as follows :—On the 27th of October last, I was called by the Meat Inspector to give an opinion as to the fitness for food of the flesh of a cow reported to have been slaughtered to save the carcase, in consequence of sudden illness from overfeeding. The carcase was that of an animal in good condition. The flesh had the characters of good lean and fat beef. The only unusual circumstance noted was that the blood vessels were not empty as is usual in the dressed carcase, the lean being rather darker in consequence. This the owner accounted for by saying that the animal had not been properly bled. The first stomach was full of food, and digestion had evidently been going on. Although there was no evidence of poison, the stomachs and their contents were examined but without finding anything to account for sudden death beyond what was stated by the owner (who may be called A), namely, that the animal had been overfed, which appeared to be borne out by the appearance of the flesh and condition of the stomachs. Altogether there appeared to me no proof, which could be laid before a

magistrate, that the carcase was unfit for food, and it was accordingly passed.

On the 28th, the greater part of a second carcase of beef in possession of a butcher in the market was seized and destroyed by magistrates' order as unfit for food. It was stated that this carcase was that of a cow from the same byre as the foregoing, that had accidentally hanged herself in the stall.

On the 30th October, I was called to a slaughter-house to examine a dressed carcase of beef belonging to one who may be named B. B stated that three cows in his byre had taken ill, and that the first of these had died very suddenly and had been removed to the knacker's yard; the second he had killed on the second day of disease to save the carcase, which I was then asked to inspect. The third cow was also slaughtered but was not yet removed from the byre.

B believed his cattle had been poisoned, and blamed the hay which was stated to be of the same kind as A was giving to his cows.

Before giving an opinion on the fitness for food of the flesh, which was that of a well-conditioned animal, I consulted Messrs. Stephenson and Elphick who considered the case to be one of Charbonous or Splenic Fever, or as it is also termed Splenic Apoplexy, and described the *post mortem* appearances, which we then proceeded to look for and found, as follows:—

The flesh was firm, though rather dark. The blood-vessels were loaded with dark blood; patches and points of ecchymosis appeared on the peritoneum and pleura, and also in the areolar tissue and on the surface of and between the muscles. The pillars of the diaphragm were generally darker than normal and in places livid, with air vesicles appearing between the muscular fibres. The mucous membrane of the fourth stomach was congested and at the pyloric extremity (specimen exhibited) was studded with points of ecchymosis resembling petechiæ. The heart (exhibited) presented the following abnormal conditions:—The left ventricle was empty; the inner surface was extensively ecchymosed, very little of it being unchanged. The ecchymoses varied from deep red to almost black in colour, raising the endocardium longitudinally, and presented the appearance of streaks of clotted blood upon the serous membrane, but could not be detached. The outer surface of the left auricular appendage was spotted with ecchymosis of various depths of colour, most numerous at the free extremity. Several patches and spots of subserous extravasation were noted on the inner surface of the auricle. Much of the epicardium appeared bluish in hue from ecchymosis. The right ventricle and right auricle were somewhat similar in point of abnormality to the auricle and ventricle of the left side. Several spots of ecchymosis were observed at the base of the heart and on the surface of the great vessels. The spleen was

asked for but had been removed. The blood was everywhere dark and liquid.

The carcase was condemned.

On the same day, I learned that a third cowkeeper (who may be called C) had been obliged to kill one of his cows on account of a supposed turnip in its throat. I was asked to inspect the carcase which I did, and found no turnip but instead, pathological appearances like those described in the foregoing case. The spleen (part of which was exhibited) also was about three times its normal size, mottled and livid on its external surface, soft and disorganised internally, and distended with dark tarry-looking blood. The viscera were marked with spots and patches of ecchymosis. Inquiry as to the food on which C's cattle had been fed elicited that the hay had come from the same place as A and B had got theirs from. The carcase was condemned, and C was advised to get some fresh hay, but did not do so; the result was that two other cows and a pony fell ill of the disease and died, each after a few hours' illness.

On November 2nd, a cow, belonging to a milkman (D), was reported as having died after twenty-four hours' illness. The body had been removed to the knackers' yard. D stated that his cow had first shown symptoms of ailment by refusing food, had afterwards seemed in pain, and voided a quantity of black blood per rectum. Exhaustion and death supervened rapidly. At the *post mortem* examination the intestines were found congested everywhere and in many places almost black, and containing large quantities of dark liquid blood. The spleen was greatly enlarged, mottled externally, broken down, and distended with dark tarry-looking blood. The hay on which D had fed his cow closely resembled that of A, B, and C. It was ascertained that this hay had been bought in a small quantity from a retail dealer in the market. Further enquiry has shown that in all probability the hay was of the same kind as the others.

On the same day (Nov. 2nd), notice was received that another person (E) had lost a cow and a horse—the former after six, the latter after ten hours' illness. Each was reported to have had a severe attack of convulsions shortly before death. The *post mortem* appearances of the blood and tissues corresponded to those of the cases already described. It was ascertained that the cow and horse of E had been fed on the same kind of hay as the others.

In addition to these cases there have been others in the town. In all, at the present time (Nov. 8th), twelve cows and three horses have died in Newcastle from this disease. The pony belonging to C was affected in the throat with a form of Charbon termed Glosso-Anthrax. *Post mortem* examination showed extensive exudation of greenish coagulable lymph near the base of the tongue and round the gullet and windpipe. The abnormal appearances observed at the *post mortem* examinations of the cattle were also present.

One horse, also affected in the throat, and presumably from the same disease, is still ill. This is, I believe, the only case in the borough that has not terminated fatally, either from the disease or by the hand of the slaughterer.

Among the *post mortem* appearances of cattle and horses affected in this outbreak, the most frequently noted or most striking have been—bloody discharge from the nostrils, rectum, vagina, &c.; extensive hæmorrhagic infiltration into the areolar tissues and serous cavities, especially the peritoneum, less often into the pleura and pericardium; marked engorgement and enlargement of the spleen, with breaking down of its tissue; ecchymosis and petechia-like spotting of the epi and endocardium (especially the latter), pyloric extremity of the fourth stomach and surface of the external muscles; congestion of the mucous membrane of the fourth stomach and small intestines; loading of the intestinal canal with liquid blood; almost emptiness of the cavities of the heart, with flabbiness of its muscular tissue; rapid decomposition of the tissues, the lungs, heart, and viscera in some cases becoming green and smelling offensively whilst still warm and steaming; hypostatic congestion of the tissues; and, lastly, the unusual condition of the blood itself, on which these abnormal appearances depend. One peculiarity of the blood always present in the cases examined was its fluidity. This seemed to be greater in some parts of the body than others. Thus in one cow the left ventricle of the heart contained about two drachms of thin watery-looking blood; in all the cases, that in the heart was very liquid, whilst that in the spleen was thick, and there was everywhere an almost entire absence of coagulation.

Another peculiarity of the blood was its colour, which was for the most part a purplish-chocolate, but in the heart and other parts where more fluid, it was of a dull smoky red, whilst where thicker, as in the spleen, it was darker and more tarry-looking.

A third and characteristic peculiarity of the blood of this disease, and one noted in a sample drawn shortly after the death from one of the cows, is the presence of certain specific bacteria; in other samples of blood examined these specific organisms were not observed, probably from commencing decomposition.

As the disease owes much of its interest to these bacteria which have been described by Dr. Burdon Sanderson, I cannot perhaps do better than quote his words on the subject.* Dr. Sanderson says:—"The first infective disease in respect of which it could be asserted with anything like probability, that a specific organism was present either in the blood or tissues, was Splenic Fever. The peculiar staff-shaped bodies which are apparently always contained in the liquor sanguinis in this disease were discovered in 1854, or

* Report of Medical Officer to the Privy Council.

perhaps earlier; but their significance is still a matter of dispute, there being great difference of opinion, even amongst those who admit that they are characteristic of the disease, as to the part they play in the morbid process."

In the same article the writer describes the bacteria in the words of Pollender, their probable discoverer, as "fine, apparently solid straight unbranched objects." They differ from ordinary bacteria in their having no proper motion. Of the bacteria of Splenic Fever, Dr. Sanderson says:—"In the fresh state they appear to be homogeneous, but after they have been acted on by water, or are beginning to be altered by the commencement of putrefactive change, it is seen that each rod is made up of spheroids, each spheroid consisting of a central darker part with a more transparent envelope. The most remarkable fact relating to them is that they disintegrate rapidly from the moment the blood becomes putrescent. As they disappear, the actively moving rods and spheroids, which indicate the commencement of the septic process, take their place, but there is no continuity of development between the two kinds of organisms."

The symptoms of Charbonous Fever in horses and cattle, during the present outbreak have been, so far as I could gather from observation or information, somewhat as follows:—The animals refused food, were feeble on their legs, and could not hold up their heads, had bristling coats and dull eyes. Some were restless, uneasily whisking their tails and twitching their limbs; others moaned and appeared to have colicky pains; some passed bloody dung and urine; in two horses the throat was swelled. In all there was rapid collapse, and in at least two—a horse and a cow—violent convulsions immediately preceded the fatal issue.

Dr. Sanderson in the article already quoted from mentions several instances of a rapidly fatal disease affecting the human subject and identical with splenic fever in quadrupeds. The first of these cases occurred at Munich in 1868. The chief feature of the disease was rapid collapse, with vomiting. The *post mortem* appearances corresponded with those found in horses and cattle dead from Splenic Fever. The identity of the two diseases was confirmed by subsequent observers.

Accounts of Splenic Fever *in man* have hitherto, I believe, all been given by continental writers. The case I am about to describe, although unfortunately not verified by *post mortem* examination, corresponds so closely in history and symptoms to the cases—human as well as animal—already given, that I think there is reason for considering it one of Splenic Fever in man. For the details I am indebted partly to Mr. May, the surgeon in attendance, and partly to the relatives whom, with Mr. May's concurrence, I interrogated after the death of the patient.

The patient, a butcher, after having dressed one of the diseased

carcases was taken ill with excessive vomiting and purging. He had previously complained of pain in the loins, and appears to have had a presentiment of impending death. On the morning of Tuesday, October 31st, he was so unwell as to be unable to attend to business at the weekly cattle market. Mr. May was asked to prescribe for his vomiting and diarrhœa on Wednesday evening, and visited him for the first time on Thursday morning, when the diarrhœa had ceased, and the patient thought himself a little better. In the afternoon of the same day the patient had a convulsive fit, in which he died. After death, the thumb was observed to be turned towards the palm. The extremities and other parts of the body are said to have turned black, and there was oozing of blood from the nostrils. The deceased does not appear to have wounded himself in dressing the diseased carcase. The friends thought his illness and death were the result of a fall he had had a week or two before, but of this there was no evidence. *Post mortem* examination was not permitted.

This outbreak of charbon is closely connected with the use of some coarse, reedy-looking hay grown on marshy ground at a farm in the country where the disease had been prevalent about the beginning of the present year. Although brought to market at many different times, and sold sometimes in small quantities not booked, and occasionally re-sold, we have with care been able to trace a positive connection between the eating of this hay and the appearance of the disease in all the animals affected except two, and in these two the case against the hay is almost proved.

Continental writers recognise the influence of morasses and stagnant water and forage tainted with decomposing organic matter as among the chief causes of Charbon. What was the original cause of the disease on the farm, I am not at present prepared to say.

Dr. Embleton asked as to the *post-mortem* appearance of the liver and skin of the animals that had died from Charbonous Fever, and whether any analysis of the tissues had been made. He said that much valuable information as to the disease was to be obtained from the French dictionaries of medicine. He suggested that Mr. Armstrong be asked to report to next meeting of the Society any further particulars that might occur in regard to the present outbreak.

Dr. McDiarmid asked whether the cattle affected showed any abdominal distension.

Mr. Spear asked if precaution had been taken to prevent the sale of the meat for human food, and spoke of the probable effects of the consumption of the flesh on the human frame. He inquired whether there were any history of inoculation, and alluded to the supposed connection between ague and charbon in certain marshy districts.

Dr. Newcombe asked if the disease had been observed in any of the American beef which had lately been sold in Newcastle.

Dr. Maclachlan inquired as to the effect on human beings of drinking the milk of cattle so affected, and wished to know if means had been taken to prevent its sale.

Mr. Armstrong thanked Dr. Embleton for the suggestion as to the French literature of the subject, and also said that the *post-mortem* condition of the livers of the cattle and horses he had examined was not striking; the surface of the organ was occasionally mottled, and the substance somewhat congested hypostatically. The external surface of the skin, so far as could be observed, showed little departure from the normal state. The areolar tissue was, however, almost everywhere largely infiltrated with blood. The speaker had been informed that the owner of the farm referred to in the paper, suspecting poison, had had analyses made of the viscera and the contents of the stomach, but without finding anything to justify his suspicion. With regard to the question of Dr. McDiarmid, distension of the abdomen, from gas in the intestines, was usually present, and occasionally to a considerable degree. In reply to Mr. Spear: Precaution had been, and would continue to be, taken that the flesh should not be sold for human food. There was no history of inoculation in the cases detailed in the paper, the disease in the quadrupeds being supposed to be entirely due to the matters taken into the stomach. Cases of charbon, after inoculation, would show signs of external local affection during life, as, *e.g.*, Malignant Pustule. Splenic fever was the same as braxy in sheep, a disease common in Scotland, where the flesh of the affected animals is said to be eaten with impunity. Other names for the localised form of the disorder are—black leg, black quarter, quarterill, &c. As regarded the death of the butcher after dressing the diseased carcase, the woman who had "laid out" the body had afterwards taken ill, with symptoms similar to those the deceased had suffered from, and which she attributed to contagion; she was now recovering. In reply to Dr. Newcombe: The American beef was in no way connected with the present outbreak. The speaker had purchased some of this beef when it was first introduced into the town, and had found it of as good quality as any that could be put upon the table. In reply to Dr. Maclachlan: The milk of animals suffering from charbonous fever was unfit for food, and was likely to produce the same disease in the consumer. The cowkeepers had been cautioned, and there was no reason to suppose that any risk to human beings had been incurred through the distribution of milk so diseased.

The President requested that Mr. Armstrong would report any extension of, or other information as to, the disease at next meeting of the Society.

NORTHUMBERLAND AND DURHAM

MEDICAL SOCIETY.

THE third monthly meeting was held in the Library of the Newcastle-upon-Tyne Infirmary on Thursday, December 14th, 1876. The President (Mr. Morgan) in the chair.

The following gentlemen were elected members of the Society:—

Barron, James, M.R.C.S., Sunderland.
Barron, T. W., B.A., M.B., Cantab., Newcastle.
Blumer, W. Percy, L.R.C.S., L.R.C.P. (Edin.), Sunderland.

The following gentlemen were proposed for election:—

Baumgartner, J. R., M.R.C.S., Newcastle.
Maling, E. A., M.R.C.S., Sunderland.
Aitcheson, J., M.B. (Edin.), Wallsend.

PREVALENT DISEASES OF THE DISTRICT.

Mr. HENRY E. ARMSTRONG presented the following:—

Return of Admissions to, and Deaths at, the Newcastle Fever Hospital, during November, 1876,

	Cases.	Deaths.
Enteric Fever	8	1
Scarlet Fever	1	—
Total	9	1

The fatal case of enteric fever was complicated with, and death was due to, peritonitis. Mr. Armstrong remarked that there had been very little typhus during the past year, less than during any year since his appointment as medical officer to the Fever Hospital.

Dr. Foss asked if any member had met with any cases of small pox. The disease was prevalent in some parts of the country. Several cases had occurred in a village near Stockton. It had been imported from Manchester. There had been one death.

Dr. BRAMWELL said he had been informed that some cases had occurred at Durham.

Dr. MACLACHLAN said of 400 cases which he attended during the last epidemic all were vaccinated except 39. The deaths were 9. Seven of the fatal cases were unvaccinated.

Mr. Mordey Douglas said the case mentioned by Dr. Foss showed the importance of preventing persons affected with the disease travelling from place to place. The last epidemic in Sunderland was distinctly traced to importation. During that epidemic he had 211 cases, of which 31 were unvaccinated. The total number of deaths was 18, of which 14 were unvaccinated. Of the four vaccinated cases the operation had been very imperfectly performed in two. The remaining two died of bronchitis.

Mr. H. E. Armstrong said he would be much obliged if any gentlemen who met with cases of small pox would give him early information, so that prompt steps might be taken to prevent the spread of the disease. He was afraid in the present state of the law it was impossible to prevent epidemics.

Dr. Denham said it was of the greatest importance to be forewarned. The last epidemic was introduced into South Shields by a sailor. Had this first case been isolated, the epidemic might have been prevented.

The President drew attention to the fact that in the returns of the London cases, published during the last week, the number of deaths in vaccinated and unvaccinated cases was equal.

PATHOLOGICAL TRAY.

Dr. Philipson presented an ovarian cyst, which had undergone suppuration, and which had not been recognised during life. The woman, aged 45, was admitted into the Newcastle-upon-Tyne Infirmary, under his care, October 26th, 1876, and stated that she had been ill for ten months. She was suffering from general dropsy, which had commenced in the face, and which was regarded as due to degeneration of the kidneys, the urine being of sp. gr. 1010, and containing albumen and casts (granular and hyaline). The heart sounds were healthy. Gradually symptoms of uræmic poisoning supervened, and she became comatose, and died on November 13th, 1876. At the autopsy, upon opening the abdomen, a tumour, of about the size of a man's head, of a cystic character, was found situated to the left of the middle line. It had displaced the sigmoid flexure of the colen, which had made its way along the upper and round the right side of the tumour into the pelvis. The tumour was associated with the left ovary, and consisted of one principal cyst, which had ruptured by two small openings, which admitted a probe. The lower part of the pelvic cavity contained a small quantity of thin purulent fluid. Upon opening the cyst, it was seen to contain decomposing pus and shreds of a putty-like material. The kidneys were enlarged, the

right weighed 7 oz., and the left 6¾ oz. The capsules were stripped off easily, leaving the surface smooth, and pale on section. The cortical substance was observed to be markedly pale and scarcely distinguishable from the pyramidal portion. On the application of a solution of iodine, the surface was not stained brown. The spleen weighed 3¾ oz., and was natural. The liver was healthy in character, and weighed 7 lb. 12 oz. The heart was normal, and weighed 7½ oz. The lungs were œdematous. In the absence of any signs of peritonitis, it was regarded that the erosion and rupture of the cyst must have occurred very shortly before death.

The PRESIDENT said Dr. Philipson's case called to his remembrance a case in which an ovarian cyst suppurated and opened into the rectum. It continued to discharge per rectum for five years, but finally ruptured into the peritoneal cavity. Death took place in a few hours from peritonitis.

Dr. GOWANS said : Dr. Philipson's case was one of considerable interest. Surgeons were coming round to the idea that it was right to operate in the most unfavourable cases, and thus give the patient the chance of recovery. He had lately sent a case to Dr. Keith, of Edinburgh. After the patient's arrival in Edinburgh one of the cysts ruptured into the peritoneum. Dr. Keith removed 12 ounces of black bloody fluid from the peritoneal cavity by means of the aspirator. A week after this operation very serious symptoms set in, and Dr. Keith came to the conclusion that the cyst was gangrenous. In spite of the advice of some of his friends, he operated, and removed a large gangrenous cyst in the usual manner. A tube was left in the cavity of the peritoneum, and through it any fluid which collected was aspirated. The patient is doing very well.

Dr. MACLACHLAN said he had lately aspirated and drawn off a quantity of pus from an ovarian tumour. The patient unfortunately died four days afterwards. He proposed to show the uterus and ovaries at the next meeting.

Mr. WILLIAMSON showed a laryngeal polypus, and said: This larynx was removed *post mortem* from a man aged 37, who had been a potter. For several years before his death he had suffered from symptoms of phthisis, but in addition, he had occasional attacks of extreme dyspnœa—potters' asthma. When he came to the Infirmary, he had the physical signs of emphysema, and of some consolidation at the apices of the lungs. He was very hoarse, and said he had been so for many months. On using the laryngoscope, a small polypus was seen, it was rather smaller than a split pea, and appeared to be attached by a narrow stalk to the anterior part of the left vocal chord. The larynx was otherwise healthy. The polypus was so far forwards that it could not generally be seen when

the tongue was drawn forward in the ordinary way, but when he protruded the tongue as far as possible, it came into view. Sometimes the growth was not visible when the anterior part of the larynx was well seen, and this was accounted for by the polypus falling below the level of the vocal chords, which then met above and concealed it. At other times the polypus was between the chords and prevented them meeting anteriorly, and then his voice was of a peculiar high falsetto character; but when the polypus was below the chords, it was deep and hoarse. A pair of rectangular laryngeal forceps would have been best suited for the removal of the growth, the forceps being dipped down into the larynx, and the growth seized and removed, by the aid of the laryngoscope. As the laryngeal forceps were not at hand, a button of nitrate of silver was fused on to the end of a bent wire, and the growth touched, but with little effect. The man was subsequently much exposed outside, and he was admitted in a dying state.

Dr. Mearns showed—1. An anencephalous fœtus, and said: The specimen which I have the honour to show the Society came into my possession about a month ago, but owing to its being kept for some time the appearances are not so well marked as in the recent state. It is, as you will observe, only a seven months' fœtus. The mother was a primipara, and both parents were young (neither being more than twenty-one) and delicate—there being a distinct history of consumption on the father's side. The labour was natural, except that there was an excess of liquor amnii and an adherent placenta. I think the best explanation of these cases is on the theory of arrested development. The neural arch was not yet closed in, thus accounting for the absence of the parietal and occipatal bones of the head and the posterior arch of the cervical vertebræ, which absence constitutes this monstrosity. It was still-born, but it seemed to have been alive up to the commencement and during the first part of labour.

2. The stomach of a man who died from arsenical poisoning. It would appear that he had been very much addicted to drinking, and occasionally, after any excessive indulgence, he had, from his own account, been accustomed to take arsenic for the purpose of counteracting the effects of the alcohol. I was called upon to see him about nine o'clock the night before he died, and he then told me he had taken, between three and four o'clock that afternoon, as much arsenic (crude) as would lie on a sixpence—which would be about 12 or 14 grains. I may mention that the man was a chemical broker, and thus had always this crude commercial arsenic about him.

When I saw him first he was suffering from all the symptoms of an irritant poison—vomiting, nausea, purging, severe pain in

the region of the stomach, great thirst, extremities cold, pnlse quick and weak, &c., &c. The usual treatment was adopted—warm applications externally, milk and white of egg internally, with beef-tea and brandy by the rectum, &c., but he gradually sank, and died at four o'clock next morning. A *post mortem* examination was made thirty hours after death, and the appearances were as follows :—Cadaveric rigidly well marked, flexures of upper extremity contracted, features placid, pupils slightly dilated, no suffusion of eyes. There were no external marks on the body. On opening the chest the pericardium was found empty. The heart flaccid and almost empty, abouf half a pint of dark half-coagulated blood escaped from great vessels on its removal. The cavities and endocardium were normal.

Lungs congested with dark venous blood, otherwise healthy. *Liver* enlarged and friable, presenting the appearance of a cirrhotic liver in first stage. *Spleen* healthy, but congested. *Stomaeh*, of a natural colour externally, contained about $1\frac{1}{2}$ parts of coffee-coloured fluid mixed with curdled milk of a sour alcoholic odour. The mucous membrane was generally thickened and congested. There were numerous bright patches of ecchymosis varying in size from a threepenny piece to a shilling, more particularly on the greater curvature, also several striated black patches towards the pylorus. The duodenum was in much the same state as the stomach, except the black patches, and here and there were several large crystals adhering to the mucous membrane. The morbid appearances were less marked in the lower part of the small intestine, but better in the large intestine; the minute vessels here were very much injected. There were no appearances of peritonitis. *Kidneys* very much congested, more particularly the pyramids, very like the first stage of inflammatory Bright's disease. *Bladder* empty, mucous membrane inflamed, more particularly towards the neck. Having got notice to make the *post mortem* only two hours before the inquest, there was no time to carry the examination further.

The stomach presents much the same appearance that it did in the recent state, with the exception that the bright patches of ecchymosis are not so distinct, the redness being more diffused.

In examining the intestines we found this diverticulum situated on the ileum about 2 feet above the ileo-colic valve. It is about 2 inches long, and you will see that it is more inflamed than that part of the ileum from which it arises. There were some hard particles in it, like pus, and a fish bone about half an inch long.

Dr. Drummond asked if there was any eruption on the skin, and if the liver was fatty. A recent German writer had stated that the liver and kidneys are always fatty in chronic arsenical poisoning.

Dr. Mearns said there was no eruption, the liver and kidneys were normal. He was unable to say what quantity of arsenic the patient was in the habit of taking.

Mr. Hopgood said in chronic cases the pyloric end of the stomach is most affected; in acute cases, on the contrary, the large curvature and cardiac end are inflamed.

Dr. Heath exhibited—1. A case of lithotrity instruments, presented to him for professional services, and said: "This case, Mr. President, contains specimens of the best workmanship of the two most known instrument makers in this country, viz., Messrs. Weiss and Coveter and Son. There are here altogether eight lithotrites, intended for dealing with every description of stone, or fragment of stone, whether in the bladder, or obstructed in the urethra. These instruments are as near perfection as possible; the combination of strength with lightness, and the facility of movement of the different parts of the instruments are remarkable. A small lithotrite, without screw, for crushing very small stones in a child's bladder, but which are too large to pass along the urethra, is particularly worthy of examination. The box also contains Clover's apparatus, and various sounds in the most recent and approved forms, adapted to search the bladder successfully in every sort of case that can come before the surgeon." Dr. Heath shortly described some of the newer forms of sound, and also a scoop for removing stones from the urethra, made according to his own suggestions, and which had been found extremely useful for the purpose. The box made of Pollard oak, expressly chosen for the purpose, mounted in silver, and very solid, was of itself a beautiful example of workmanship, and was shown by Dr. Heath as constituting, with its contents, a good specimen of modern British skill, displayed in the manufacture of surgical instruments.

2. A specimen of carcinomatous disease. The mamma and greater part of the great pectoral muscle, and a mass of axillary glands; the whole removed from a female patient fourteen days previously. The chief interest attaching to these pathological specimens consisted in their magnitude, and the extent of the disease requiring removal. Eighteen months ago, Dr. Heath had taken away a scirrhous tumour from the left labrium as large as an orange. At that time the left mamma was the seat of cancer, and Dr. Heath had then urgently advised its excision, the tumour being comparatively small and moveable, and the axilla free. It was only, however, a fortnight ago that the patient had returned, when the breast was found enormously enlarged, as the specimen on the table showed, and the armpit occupied by the hard glandular enlargement. The patient being otherwise healthy and anxious to be relieved, the operation was determined upon. Dr. Heath had intended merely to divide

the pectoral muscles in order fully to expose the axillary disease, but upon proceeding to detach the mamma it was found to be so incorporated with the pectoral that the removal of the outer half of this muscle was necessitated. It was divided in the direction of its fibres, and the diseased part detached from its origin, and the tendon of insertion cut through. Afterwards the axillary mass was readily got at, and carefully dissected out. The whole armpit was thoroughly cleared, the axillary vessels being exposed. A small vein entering the diseased mass was cut close to its origin and twisted. The operation was done antiseptically, and the patient, up to the time of the meeting, had progressed satisfactorily towards recovery.

3. Two calculi, one phosphatic, weighing 280 grains, from a boy of nine; the other of urate of ammonia, weighing 227 grains, from a boy of six. Dr. Heath said that the phosphatic stone was of large size in comparison to its weight, and also for the age of the patient. It had occupied a peculiar position, which gave some practical importance to the case. The finger placed in the rectum came upon a hard lump at the neck of the bladder and occupying very much the position of an enlarged prostate in the adult; pushed further up the rectum, the finger still felt this lump reaching well into the cavity of the bladder. The lump was moveable, but to no great extent. A sound came readily down upon the stone, but could be passed beyond it and fairly into the bladder only with some difficulty. The operation was done in the usual way, and was not attended with difficulty, although the staff could not be placed in the ordinary position, but required to be held on the left side of the stone. On the withdrawal of the staff, the finger, placed in the incision into the prostatic portion of the urethra and neck of bladder, came at once upon the stone. The blades of a small forceps were carefully slidden between the stone and the edges of the incision, and the stone grasped. On making gentle traction, the bulk of the stone came away, and the bladder at the same time appeared to recede. The finger now introduced into the wound, entered a large circumscribed cavity, the walls of which were quite accessible to the finger and smooth: pushed on in the direction of the bladder, the finger entered an opening just large enough to admit it, and in which it was grasped as by a sphincter muscle; through this opening the finger penetrated into a cavity, evidently the bladder, in which lay fragments of stone.

The stone then, at and before the operation, lay in part within, and in greater part without, the bladder. The circumscribed cavity into which the finger first passed was certainly the dilated prostatic urethra and neck of bladder, distended into a sort of sac, on which the bulk of the stone was held; the contractile opening through which the finger penetrated into the real cavity of the bladder was the orifice of the bladder somewhat enlarged by the residence in it of

a narrower portion of the stone, whilst within the bladder itself was a prolongation of the stone, soft in structure, which broke off in fragments at the moment of extraction.

Probably at some period before the boy came under my care the stone had passed out of the bladder into the prostatic region, and too big to pass along the urethra, had remained and grown in that position, its bed gradually enlarging with it, the end of the stone projecting into the orifice of the bladder, also receiving accretions of calcareous matter.

The shape of the stone entirely favours this view, and the condition of the parts, revealed at the operation, admits of no other explanation. In children the stone is often so shaped at one end as to indicate that it has been frequently pressed in straining, into and partly through the neck of the bladder. Here is a peculiar shaped cylindrical stone 2 inches and $\frac{3}{4}$ long, which was removed many years ago from a boy of 11, and which shows this formation in a remarkable manner; and here is another curious stone which was cut out of a cyst of the bladder; this stone has a body, neck, and head, the body occupied the cyst, the neck lay in the mouth of it, and the head projected into the bladder. I show these stones as they illustrate, I think, the case which I have just related.

The second stone is only remarkable as being either a residual stone left at a previous operation, or an example of extremely rapid formation. The boy from whose bladder it was taken had been operated upon some six months before my operation. At that time a small stone was taken from him. The wound made in this operation had not healed, and it was for the fistula remaining that he came under my care.

The PRESIDENT said, in the year 1857 he assisted in the removal of a scirrhus tumour of the breast as large as the one shown by Dr. Heath. In that case the pectoral muscle was cut through, and a large mass of glands removed. He lately saw the patient, who had never had the slightest return of the disease.

Dr. JONES showed a fœtus at the fifth week.

EXHIBITION OF PATIENTS.

Dr. HEATH also showed—1. The young woman whose upper jaw was exhibited at the last meeting. The wound in the face had been healed for some time, and the marks left were trifling. 2. An infant, presenting a singular congenital condition of the knees. The patella was represented merely by a small nodule of bone on the outer aspect of the joint; the condyles of the femur projected backwards into the popliteal space, where they were distinctly felt. The knees could not be flexed in the ordinary way, but were capable of slight flexion in the opposite direction. The condition resembled congenital dislocation of the knee, but differed from this in the imperfect development of the patella.

Dr. B. BRAMWELL introduced a boy, æt 11, who was the subject of Pseudo-hypertrophic Paralysis. He had been ill for six years. He was quite unable to stand or walk unsupported. When supported the attitude was peculiar, the back being much arched, the head thrown back, the feet widely separated, the body resting on the toes. He was unable to extend the leg or the thigh, the toes were pointed, in the condition of talipes equinus. Sensibility was natural. Muscular contracting both to the Voltaic and Faradaic currents greatly diminished. The muscles of the body generally were very much wasted. The muscles of the calf in both legs were hypertrophied; in the left leg the calf measured 10½ inches. The thigh at its thickest part only 11 inches. Dr. Bramwell remarked on the rarity of the disease.

Dr. MCDOWELL said he had seen a similar case in an imbecile.

Dr. J. W. BRAMWELL asked if the muscles had been examined microscopically. He had seen a case in Edinburgh in which the microscopical changes in the muscle were very marked.

Dr. DRUMMOND briefly related the features of a case under his observation in which there was no true paralysis, but a condition of rigidity of the muscles.

Dr. MACLACHLAN said he had met with two cases similar to that described by Dr. Drummond.

CASES OF ANEURISM OF THE AORTA.

By BYROM BRAMWELL, M.B.,

PHYSICIAN AND PATHOLOGIST TO THE NEWCASTLE-ON-TYNE INFIRMARY.

Mr. President and Gentlemen,—During the past two years six cases of aneurism of the aorta have been admitted to the Newcastle Infirmary under my care.

In this paper I propose to record, as briefly as is consistent with scientific accuracy, the notes of these cases.

The treatment adopted was the administration of large doses of iodide of potassium after the manner recommended by Dr. G. W. Balfour, of Edinburgh. In all rest in bed was enforced as far as possible. The results obtained have been on the whole very satisfactory.

Case I.—*Aneurism of the Ascending Thoracic Aorta. Unilateral sweating of the right side of the head and face. Intercurrent Pericarditis. Discharged relieved.*

Patrick Dillon, æt. 40, a pitman, single, was admitted on the 16th of January, 1876, suffering from an aneurism of the ascending thoracic aorta.

Previous History—Until his present complaints commenced he enjoyed excellent health. On 17th August, 1874, while lying in bed, he happened to place his hand on the upper part of the chest, and was astonished to feel a strong pulsation. The next day he consulted a doctor, who advised him to leave off work. He has been under medical treatment since, but has got worse instead of better. Previous to August, 1874, he suffered for a year at least from pain in the left shoulder-blade and shoulder.

Nine years ago he had syphilis.

Family History.—Unimportant.

State on Admission.—Patient is of middle height, dark hair, light brown eyes, complexion pale, mucous membranes anæmic. He is somewhat emaciated. He complains of pain and beating in the right breast, palpitation, shortness of breath on going up stairs or up a hill, and occasional cough. The pain is constant, at times it is very severe, shooting through to the back, up to the shoulder, and down the right arm to the tips of the fingers. For several nights past it has been intolerable, and has prevented all attempts to sleep.

On Inspection.—A slight pulsating prominence is seen between the second and third costal cartilages. A double impulse and systolic thrill are felt over the prominent area, which is the size of a five-shilling piece. Pain and tenderness on pressure are complained of over the prominence, and at a spot between the superior angle of the right scapula and the spine. *On percussion*, there is absolute dulness over a space two inches square. The centre of

this area is the pulsating prominence. There is also impaired percussion over the upper part of the right infraclavicular, and over the upper sternal regions. *On auscultation,* a double impulse and soft systolic murmur are audible over the aneurism. The respiratory murmur and vocal resonance are absent over the dull area. There is impaired percussion between the superior angle of the right scapula and the spine. A double sound is audible over the same spot.

The pupils are at present equal, but the right is sometimes larger, sometimes smaller than the left. There is also right-sided unilateral sweating of the head and face. The patient states that he has noticed this for nine years.

The respiratory murmur and vocal resonance are weaker in the right lung than in the left. The voice is hoarser than it used to be. There is slight difficulty in swallowing.

The cardiac apex can be felt in the 6th left interspace, three inches below the nipple. Cardiac dulness extends transversely from the left border of the sternum to the left nipple, a distance of $3\frac{3}{4}$ inches. Vertically it measures $4\frac{1}{2}$ inches, extending from the 4th to the 7th rib. A soft systolic murmur is audible at the apex. The pulmonary sounds are not accentuated. The aortic second sound is very loud over the mid-sternum, at the level of the nipple. It is much louder at this spot than over the aneurism itself. The pulse numbers 74, is regular, equal in the two wrists, slightly visible and jerking.

The other systems and organs are normal.

Treatment.—He was ordered half-a-drachm of iodide of potassium three times a day, rest in bed, and a subcutaneous injection of morphia at bed time.

Subsequent Progress of the Case.—January 22nd. He is now almost free from pain and able to sleep well without the opiate.

February 8th.—He is much worse, looks ill and collapsed, complains of severe pain, increased by pressure, in the pit of the epigastrium. On auscultation, a double pericardial friction murmur is audible over the precordia.

The pulse is 128, weak. The temperature is 97 F. He was ordered 15 drops of tincture of digitalis every four hours.

February 10th.—Decidedly better, friction sound disappearing.

February 18th.—Still improving, friction gone. Ordered a mixture containing half-a-drachm of the citrate of iron, quinine, and strychnine.

March 1st.—Has suffered from headache for the last 24 hours. Is otherwise the same. To take half-a-drachm of the iodide three times daily.

April 2nd.—Is now free from pain, has gained a stone since his admission, and feels himself much stronger.

April 28th.—He was to-day discharged at his own request. Since last note the improvement has continued. The prominence

is not now perceptible. He has no pain, no difficulty in swallowing. The other physical signs are the same.

Remarks.—In this case the iodide was well borne, the pain was speedily relieved, and there was apparently a diminution in the size of the aneurism. I say apparently, for it is necessary to remember "that the cure may be simulated by the pulsation becoming less or disappearing, the tumour nevertheless extending in other directions." (Ziemssen, vol. vi. p. 449.) At the date of his discharge the external prominence was no longer visible, dysphagia and cough had disappeared, and the voice had to a great extent regained its natural tone.

The occurrence of unilateral sweating is a point of great interest. In the *Edinburgh Medical Journal* for 1856 Professor Gairdner describes a case in which an aneurism of the thoracic aorta involving the innominate by pressing upon the sympathetic in the thorax caused contraction of the right pupil and unilateral sweating of the right side of the head and face. Another case is recorded by Bryan, in the *London Medical Record* for June 30, 1875. M. Vulpian quotes several others.*

In this case it is doubtful whether the aneurism was in any way the cause of the condition. The unilateral sweating had been observed for nine years, and the first symptom of aneurism, viz., pain, only dated back 15 months.

The association was, however, interesting, and the condition of the parts was carefully noted on several occasions. I found, *Firstly*, that the sweating was sometimes accurately limited by the middle line. At other times it was only more profuse on the right than on the left side. *Secondly*, when unilateral sweating occurred the right pupil was always smaller than the left, and the temperature under the right ear was at least one degree lower than on the opposite side. *Thirdly*, in the intervals on the contrary, the right pupil was either equal to or larger than the left, and the temperature on the right side higher.

These results are seen in the following table :—

Date.	State of skin of right side of the face.	Condition of pupils.	Temperature right ear.	Temperature under left ear.	Temperature right axilla.	Temperature left axilla.
June 22	Sweating (left dry)	Right smaller than left	95·6	96·7	Not noted	Not noted
,, 26	Not sweating	Right larger than left	98·6	97·	97·9	98·
,, 27	Sweating (left dry)	Right smaller than left	97·	98·7	98·2	98·5

* *London Medical Record*, June 30, 1875.

Pericarditis is not a common complication of aortic aneurism. In 68 cases tabulated by Dr. Hayden, effusion into the pericardium, presumably inflammatary, is noted only once.

The cause of the pericarditis in this particular case is doubtful. Possibly it was due to some portion of the aneurismal sac pressing upon and irritating the pericardium. Such was apparently the cause of an adherent pericardium in a case which I met with some years ago, and which is interesting from the large size and unusual situation of the external tumour.

The notes of that case are as follows:—

CASE II.—*Large Aneurism of the base of the Aorta, perforating the lower part of the Sternum, and forming an external tumour the size of a child's head. Death from external rupture. Adherent pericardium.*

J. S., æt. 36, a striker, formerly, for eight years, a soldier, came under my care on April 7th, 1873.

Previous History.—His health, was excellent until two years ago, when he began to suffer from pain over the liver, in the right shoulder, and right breast. For at least three years he has been short of breath on going up stairs or up a hill. For some months his breast has been swollen.

Ten years ago he had syphilis.

Present Condition.—He complains of constant pain in the chest and right shoulder. Has a frequent short cough. A conical tumour the size of a large orange projects from the anterior wall of the chest. The base of the cone rests upon the sternum, and covers the cartilages of the 4th, 5th, 6th, 7th, and 8th right ribs. The apex of the cone is shiny and discoloured. It is evident that at this point the external wall of the tumour is very thin indeed.

Strong heaving double pulsation is felt in the tumour and all over the anterior wall of the chest.

On auscultation over the tumour itself and in the pit of the epigastrium, where there is well-marked pulsation, two sounds are heard of a superficial dull muffled character, and free from murmur.

Over the cardial apex which is indistinctly felt in the 6th left interspace, the first sound is prolonged into a dull roll. At the manubrium and over the upper and inner part of the base of the tumour a loud double bellows murmur is heard. Before the diastolic portion of the murmur there is a distinct thud.

The pulse is 80, jerking, and visible, the right being considerably stronger than the left.

This external tumour contained a large quantity of firm laminated clot.

The lower end of the sternum was eroded, and there was here a circular opening larger than a five shilling piece between the

external and internal tumour. Below the lower end of the sternum, in the position of the zygoma, was another opening triangular in shape, and somewhat larger than the circular one already described.

The edges of the circular aperture were in places beautifully smooth, evidently blood-worn.

The internal tumour was of large size and sacculated. It sprang from the very base of the aorta on its right side, and was firmly adherent to the exterior of the right cavities of the heart.

The internal portion of the tumour consisted of three sacs, the first was the size of an orange; the second, somewhat larger; and the third, the size of a pigeon's egg. All three sacs freely communicated with one another. The first sprang directly from the aorta, the second and third communicated with the external aneurism, through the openings described above.

The contents of the internal portion of the aneurism were chiefly recent clots and fluid blood.

The two surfaces of the pericardium were glued together by tolerably firm adhesions.

The wall of the internal tumour, except where it was in contact with the heart, was exceedingly thin. In the dried preparation it is quite transparent.

The aortic valves were incompetent, the segments being glued together at their edges. The aorta was slightly atheromatous. The liver and kidneys were highly congested.

(The specimen was exhibited.)

Case III.—*Aneurism of Ascending Thoracic Aorta. Greatly relieved by large doses of Iodide of Potassium.*

Hugh Patterson, æt 42, a labourer, was admitted to the Newcastle Infirmary, on the 4th of February, 1875, suffering from an Aneurism of the Ascending Thoracic Aorta.

Previous History.—He had small pox three years ago, but with this exception has been very healthy. His present illness commenced 6 months ago, with pain in the chest. Fifteen weeks ago he gave up work. There was then a slight prominence in the upper part of the right chest. He has never had syphilis nor rheumatism, and knows no cause for his illness.

Family History.—Good.

Present Condition.—Patient is a stout muscular man, 5ft. 9½in. in height, ruddy complexion, expression anxious, hair brown. He complains of a constant gnawing pain and heat in the chest. At times the pain shoots up to the right shoulder and down the right arm as far as the elbow. He is short of breath on exertion.

A prominence the size of a hen's egg is visible between the first and third right costal cartilages. Strong single pulsation is felt over the tumour, which is soft and yielding. There is absolute

dulness on percussion over the prominence. Impaired percussion over an area measuring five inches transversely and four vertically.

On auscultation a strong impulse is communicated to the ear, and a double murmur is heard. The systolic portion of the murmur is soft, the diastolic almost musical. The murmur is very distinctly heard posteriorly in the right supra-scapular region, and all down the right side of the spinal column. Two inches to the right of the 6th dorsal vertebra it is more distinct than elsewhere. No murmur is audible in the abdominal aorta anteriorly, nor in the femorals. Posteriorly the murmur is of a cooing character. The respiratory murmur and vocal resonance are absent over the absolutely dull area anteriorly.

Respiration is weaker in the right than in the left lung.

The size of the heart is normal. A soft systolic murmur distinct from that over the aneurism and propogated upwards towards the axilla is audible at the apex. The pulmonary sounds are not accentuated. Over the sternum at the level of the 4th costal cartilage a loud systolic and faint diastolic murmur are audible. At the ensiform cartilage the second sound can be faintly heard.

It was particularly noted that the diastolic musical murmur was much less loud at the base of the heart and down the sternum than over the tumour itself.

In the vessels of the neck, especially on the right side, a loud systolic murmur is heard.

The Radial Pulse is 66, regular, equal in the two wrists, and just visible.

The pupils are equal and dilated. He sleeps badly because of the pain in his chest. The other systems and organs are normal.

Treatment.—He was told to remain in bed, and half a drachm of the iodide was prescribed three times daily.

Subsequent Progress of the Case.—He made rapid and continuous improvement, and in a few days was very much easier.

On March 4th and 5th.—The pain returned, and he spat a little blood.

On March 12th.—He complained of numbness in the right arm, and of cramp in the left thigh and leg. The iodide was repeated.

On March 9th.—The iodide had to be discontinued, owing to dyspepsia.

On April 4th.—He discharged himself, saying he felt quite well. The prominence was very much less. There had been no pain since March 5th. He promised faithfully to continue to take the medicine.

Remarks.—In this case the beneficial effects of the treatment are undoubted. When admitted to the Infirmary, the patient was suffering severe pain, and was totally unable to undertake the least exertion. The aneurism too was increasing very rapidly. He

continued to work for 19 months after his discharge as a labourer in a timber yard, without pain or inconvenience. In November, 1876, the tumour began to increase in size. He presented himself for examination on December 14th, 1876. His general condition was good. The aneurism was somewhat larger than on his discharge in April, 1875. The heart was now considerably hypertrophied. He was advised to discontinue work, and to take the iodide as before.

(The patient was introduced to the meeting, and examined by the members.)

CASE IV.—*Aneurism of the transverse portion of the Aortic Arch.*

John Foster, æt. 55, a labourer, was admitted on the 1st July, 1875, complaining of pain in the chest, cough, shortness of breath, and difficulty in swallowing.

Previous History.—His present complaints commenced five months ago. Has always been very healthy. Has never had rheumatism nor syphilis.

State on Admission.—He is a very stoutly-built muscular man, light hair, ruddy complexion. The thorax is well formed. The left jugular and left brachio-cephalic veins are distended and prominent. There is marked dulness on percussion over the manubrium sterni, and to the left of it. The dull area measures three inches by four. A soft bellows systolic murmur is audible all over the dull area, and very loudly in the left subclavian artery. A marked thrill is to be felt in the same vessel. The murmur is heard, though faintly, in the left supra-spinous fossa. It is loudest immediately below the left sterno-clavicular articulation. It is less distinctly heard at the second right costal cartilage. The aortic second sound is markedly accentuated. The heart is of normal size and healthy. The left radial pulse is of good strength, regular, and numbers 80 in the minute. The artery feels rigid. The right radial pulse is imperceptible.

Respiration is weaker in the left than in the right lung. He suffers from a clanging paroxysmal cough. He spits a little frothy mucus. On laryngoscopic examination, nothing abnormal is perceptible. The voice is somewhat husky. He has difficulty in swallowing, and complains of a choking sensation in the throat. The left pupil is slightly larger than the right; both are contracted.

He occasionally feels pain in the pit of the epigastrium. This pain is relieved by pressure. The other systems and organs are normal.

Two enlarged glands are to be felt above the left clavicle.

Treatment.—Half a drachm of the iodine was given three times daily, and he was confined to bed.

Subsequent Progress of the Case.—July 8th.—He discharged

himself, saying he felt fit for work. The cough and difficulty of swallowing had gone.

July 22.—He was re-admitted very much worse. The cough constant and severe, the difficulty in breathing amounting to orthopnœa. He also complained of severe pain in the pit of the epigastrium. The same treatment was adopted.

September 13th.—The iodide was discontinued, as it has caused painful swelling of the ankles. A tonic containing iron and quinine was substituted.

September 28th.—He was discharged, feeling very well. The physical signs were much the same as on his admission.

January 10th, 1876.—He presented himself to-day, saying that he had been at work ever since his discharge. He still suffers from cough and shortness of breath on exertion; otherwise he feels very well.

Remarks.—The nature of this case was not so absolutely certain, for there was no external tumour. The facts which led me to diagnose an aneurism were :—

1st. The rapid growth of the intra-thoracic tumour. (The symptoms only dated back five months.)

2nd. The general appearance and good condition of the patient.

3rd. The accentuation of the aortic second sound.

4th. The pulsation in the supra-sternal notch.

5th. The absence of œdema in spite of the large size of the tumour, the obliteration of the right radial pulse, and the engorgement of the left brachio-cephalic and external jugular veins.

The diagnosis is, I think, fully justified by the subsequent history. All the cases of intra-thoracic tumour with which I am acquainted have gone on steadily from bad to worse, and have soon been attended with marked constitutional disturbance, emaciation, etc. Nor is this to be wondered at, when it is remembered that the forms of morbid growth occurring in this situation are rapidly growing sarcomata and carcinomata.

In some cases it is exceedingly difficult, if not impossible, to come to a positive conclusion. In a case which I brought before the notice of this Society some two years ago the chief points which aided me in forming an opinion were the extreme emaciation of the patient, the history of previous hæmopytsis, and the fact that there was a marked glandular enlargement at the root of the neck.

CASE V.—*Large Aneurism of the lower part of the thoracic and upper part of the abdominal Aorta. Extreme emaciation, pain and sleeplesness. Greatly relieved by large doses of iodide of potassium. Death after discharge from Hospital from rupture of the sac into the left pleural cavity.*

Peter McCourt, æt. 41, married, a marine store dealer, formerly

a seaman, was admitted to the Newcastle-on-Tyne Infirmary on the 20th October, 1875, complaining of severe pain in the small of the back, sleeplesness, and obstinate constipation.

Previous History.—His present illness commenced three years ago with severe pain in the small of the back. Previous to that date he was very healthy. Eighteen years ago he had syphilis. For th last six months the pain has been agonising. He never gets any sleep without morphia. He has been under many medical men, but has got no benefit.

Family History.—Very good.

State on Admission.—He is a perfect skeleton and wears an expression of great suffering. He is pale and anæmic, naturally ruddy; hair red. The left thigh is slightly flexed on the abdomen. He can only sleep in one position—on his right side, with the thigh well flexed on the abdomen, and the head and chest propped high on pillows.

There is a marked feeling of fulness, hardness, and resistance in the pit of the epigastrium. A powerful heaving pulsation and thrill are felt all over that region. No defined tumour is to be felt, even under chloroform. The epigastrium is dull on percussion; the rest of the abdomen resonant. A loud systolic murmur is heard over the seat of pulsation. No murmur is audible posteriorly.

There is dulness over the lower thoracic region on the right side, but it is impossible to distinguish it from the liver.

The heart is of normal size, the first sound at the apex is short and valvular; the pulmonary sounds are accentuated; the aortic valves normal. The radial pulse is 96, regular and weak.

He is troubled with a tickling cough.

With the exception of the pain already described, there are no other pressure signs.

The area of liver dulness is increased downwards. The urine contains a small amount of albumen.

The subsequent history of the case was short. The tumour daily increased in size, until it was fully the size of a child's head. The base extended from nipple to nipple, and projected fully an inch and a-half below the zygoma.

Death was caused by external rupture.

Post-mortem.—A ragged opening fully the size of a five shilling piece was seen on removing the external covering of plaster, etc., which had been applied as a support to the tumour during life.

The base of the large external tumour was circular, it extended from the level of the third inter-space above, to a point an inch below the zyphoid cartilage, a distance of six inches. Transversly its widest diameter was five inches.

The tongue is flabby: there are several discolorations on the buccal mucous membrane; the colour of the skin generally is

normal. There is no difficulty in swallowing, but he is afraid to eat, as food always causes pain in the pit of the stomach. He never vomits. The bowels are never opened except with medicine; a very small dose of castor oil is sufficient for the purpose.

The other systems and organs are normal.

Treatment.—He was ordered half a drachm of the iodide three times daily, and a subcutaneous injection of morphia when required.

Subsequent Progress of the Case.—Three days after admission he was comparatively easy, and was able to sleep without opiates. In a fortnight all pain had gone; he was able to stand and walk; had gained flesh, and was looking wonderfully improved.

He discharged himself on November 24. He was in good circumstances, and thought he could continue the treatment as well at home as in hospital.

He presented himself several times afterwards, and always reported himself better.

He died suddenly some months after his discharge. My friend Dr. Bates, of North Shields, made a *post-mortem* examination, and very kindly sent me the specimen. Death was caused by rupture of the sac into the left pleural cavity.

Description of the Specimen.—At the junction of the transverse with the descending portion of the aortic arch there was a small bulging the size of a plum; an inch below this the aorta was uniformly dilated to the size of a hen's egg. Immediately below this second sac there was a large aneurism. The tumour was heart-shaped, the size of a child's head, involving the whole of the descending thoracic and the upper part of the abdominal aorta. The greater part of the tumour bulged downwards into the abdominal cavity. The left pleural cavity was full of blood. The sac of the large aneurism contained a large quantity of firm laminated clot. The 7th, 8th, and 9th dorsal vertebræ were eroded. The aneurism had burst in the left pleural cavity.

(The specimen was exhibited.)

Remarks.—This patient on his admission was in constant agony, emaciated to the last degree, and for weeks has been unable to sleep without large subcutaneous injections of morphia. After taking the iodide for a few days his sufferings were completely relieved, he gained flesh, and felt so much better that in a month he persisted in leaving the hospital. A better result, considering the short period of the treatment, it is impossible to wish for. Had he submitted to remain at rest in bed and continue the treatment, the fatal result might have been long delayed, and, possibly, altogether prevented.

The sac ruptured into the left pleural cavity, the usual terminations of aneurisms of the lower part of the thoracic aorta. Abdominal aneurisms too frequently burst in the same direction.

Of sixteen cases tabulated by Hayden three ruptured into the lung and pleura. The termination in the remaining thirteen was as follows :—

Rupture into retro peritoneal tissue	6
Rupture into peritoneum	1
Syncope	2
Asthenia	1
Bright's disease	1
Not noted	2
	—13

Of nine cases recorded in the "Transactions of the Northumberland and Durham Medical Society," the termination was as follows :—

Rupture into retro peritoneal tissue	4
Rupture into Peritoeum	2
Rupture into left chest	1
Rupture externally, through a bed-sore	1
Cured	1
	—9

The case which ruptured externally is, so far as I know, unique, and I feel quite justified in quoting it at length. It is reported by Dr. John Cargill ("Transactions of the Northumberland and Durham Medical Society," session 1851-52, page 38). The patient was seen from time to time by Drs. Heath, White, and Hawthorn, in consultation with Dr. Cargill.

CASE VI.—*Enormous Aneurism of the Abdominal Aorta. Death from External Rupture through a bed-sore.*

"The patient, a gentleman, æt. 33, enjoyed good health until Christmas, 1849. He then began to complain, without any known cause, of pain in the back, especially on stooping or sitting long in a stooping position. He consulted Dr. Taylor, of Huddersfield, who treated him for sciatica. The only thing which gave him relief was large doses of Battley's Solution. He was first seen by me (Dr. Cargill) on 4th January, 1851. The pain was then very constant, sometimes in the hip, sometimes in the middle of the thigh. Aneurism of the abdominal centre was suspected, but no trace of it could be discovered.

"By-and-bye there came a different species of pain. This was of a scalding nature, and it was confined precisely to the anterior surface of the right thigh, the skin alone being the seat of it.

"During all this time there was no paralysis of the limb, nor any œdema of the feet, but there was a slight halt in walking.

"He now, after four months of treatment, improved wonderfully, so as to be able to return to his business, and continued writing for four or five hours together, never entirely without pain, but that pain trifling only. He also gained flesh, and looked very well.

"In August, all the symptoms returned; he got worse and worse, thin and pale, his appetite left him, and the opiates had to be repeated in large doses.

"On the 15th of December, a tumour about the size of half a small apple, about two inches to the left of the first two lumbar vertebræ, was discovered; it was oblong, and pulsated strongly. A very faint rasping murmur was heard on auscultation.

"In seven days the tumour had acquired thrice the size in the lumbar region, and had crept round the left loin anteriorily to within two inches of the umbilicus. It felt elastic and somewhat tough, and the same low rasping murmur was distinguishable both in front and behind.

"In a few weeks it attained an immense size, pushing up the diaphragm and often impeding respiration. It pressed down into the left groin, and the left limb was almost entirely paralysed; the foot was swollen, and the toes became intensely painful.

"The cutaneous burning pain before mentioned as affecting the thigh now frequently assailed the surface of the right side and the right back, and was best relieved by the same application, namely, cold water.

"About four weeks before his death, Mr. S. was seized with a dreadful attack of bilious vomiting, which continued at intervals for two days, and was preceded by delirium and jaundice, and followed by obstinate constipation.

"At last the tumour became so large and hard, extending for three inches to the right of the umbilicus, that it seemed to some almost Utopian to regard it any more as an aneurism, but the result showed that its nature had been correctly appreciated, for on the 19th of February he was seized with alarming prostration and difficulty of breathing, and in two hours he expired.

"When I came in two hours after his death, suspecting the proximate cause, I turned his body on to the right side, and found that the tumour on the back had given way by a small opening in a deep bed-sore which had formed there, and that the bed and floor beneath were soaked with blood. The tumour was collapsed and soft.

"*The autopsy* was made twenty-eight hours after death by Dr. Gibb, house-surgeon of the Infirmary, in the presence of Dr. Heath, sen., Dr. Glover, and myself (Dr. Cargill). Organs of the chest healthy; liver enlarged and fatty. The stomach was pushed upwards, and the whole of the small intestines were pushed over to the right side of the abdomen (where they occupied a small space only) by a solid tumour of immense size, over the anterior surface of which ran the transverse arch of the colon and its descending portion. They were firmly agglutinated to the tumour and narrowed in their calibre in consequence. The internal surface was very dark, as if the mucous membrane had been secreting carbon, and that tract of the tumour to which they were attached was as though painted with the same black deposit. The descending

colon found its way into the pelvis by coursing over the right border of the tumour. The tumour had a tough, hard leathery investure, composed evidently of dense interwoven layers of cellular tissue, having a fibrous appearance. The following were its position, boundaries, and dimensions :—Superiorly it was bounded by the diaphragm, which formed the highest part of its wall. Hence it extended down the left side of the whole abdomen into the lumbar region and forward to the pelvis, where it finished by pushing before it the fascial under Poupart's ligament for about an inch into the crural region, the psoas and iliacus muscles being lifted over its inner and lower surface, and, by their inseparable attachment to it, materially strengthening its wall. Thus its lower termination was conical in form. The sacro-sciatic plexus was flattened and attenuated everywhere. To the right the tumour extended across the abdomen for three inches beyond the umbilicus, pushing the liver and stomach upwards, and the small intestine outwards and downwards, and resting on the vertebral column and right lumbar floor, immediately internal to the right kidney, which it just cleared, leaving it in the undisturbed possession of its functions. Its length horizontally—*i.e.*, from the diaphragm to the thigh—was sixteen inches; its transverse breadth—*i.e.*, from the junction of the sac with the left abdominal wall across its centre to its termination at the vertebral column—was thirteen inches; from its anterior surface through it to the anterior face of the vertebral column its thickness was six inches, and composed of layer upon layer of dense fibrinous clot, and the weight of the whole mass was 14 lbs. The two last dorsal and the three first lumbar verterbræ were carious, two of them very much eaten away, and the interior of the cord itself in two cases only barricaded by its thickened and tough internal periosteal lining, which was exposed. The intervertebral cartilages were unaffected. The tenth rib was greatly absorbed. The eleventh was converted into a substance like a thin layer of cartilage, the chief portions of it being absent. The twelfth had entirely disappeared. On now detaching the aorta from the vertebral column from above downwards, we perceived an open orifice an inch long in its posterior lock close to the cæliac axis, and being a passage leading backwards to a true aneurismal dilatation of all the coats of the artery, and which for size might contain the fist. The direction of the passage of the aorta was through the right side of the mass, and therefore a few inches to the right of its natural position. During life the femoral arteries could be felt pulsating, and of equal strength. What happened to the left kidney was very remarkable. It nowhere appeared on the tumour being removed from the body, and we conjectured it would be found embedded in the sac. This was the case, for, incising the tumour in its lower third in front and towards its left

side, we came upon it immediately under the first dense outer layer of the sac. It was perfectly flattened, and, as it were, pressed out, but preserved the usual pale, smooth, and compact aspect of the kidney. The artery and vein were flattened and obliterated, as was also the ureter. The right kidney was almost half as large again as it should have been to be natural."

The cure recorded in the "Transactions of the Northumberland and Durham Medical Society" was Dr. Wm. Murray's well-known case—the first case in which the rapid-pressure method was adopted. Great improvement also followed that plan of treatment in the following case :—

CASE VII.—*Abdominal Aneurism partly cured by pressure.*

William Payne, æt. 38, a sailor, was admitted to the Tynemouth Union Workhouse on 7th December, 1874, complaining of rheumatic pains (worse at night) in various parts of the body, and of an abdominal aneurism.

Previous History.—Nine years ago he had syphilis. Five years ago he suffered from rheumatic pains, and it was at that time that he first perceived a pulsating tumour, the size of a hen's egg, in the abdomen.

The tumour gradually increased in size until two years ago. At that time he was in the Royal Infirmary, Liverpool, and pressure was made upon the sac. Since this treatment the tumour has been much harder, and has not increased in size.

He has been from time to time under 200 doctors. All with one exception—Professor Anderson (?), of Edinburgh—told him it was an aneurism.

For the last two years he has been able to go to sea. His present attack of rheumatism commenced a fortnight ago.

He is unable to do heavy work. The aneurism causes him considerable inconvenience. He constantly feels the beating.

He has been treated by iodide of potassium, and the aneurism has, on more than one occasion, been subject to compression, (probably below the sac.)

Present Condition.—Patient is a short, dark-haired, dark-complexioned man. He is thin, pale, and anæmic. None of the joints are swollen. The temperature is normal.

A large irregular-shaped tumour occupies the epigastric, umbilical, and left hypochondriac regions. It is broad above; narrow and rounded below. The narrow part is very firm and hard ; the upper part softer. Strong heaving pulsation is felt in the upper part of the tumour. The cartilages of the lower ribs are heaved forward by each pulsation.

On percussion there is dulness over that portion of the tumour which is situated in the epigastric and left hypochondriac regions.

There is also dulness over the lower part of the left infra-mammary region.

On auscultation a very strong heaving pulsation is communicated through the stethescope to the ear. A faint murmur is heard towards the end of the impulse. No murmur is heard posteriorly.

There are no pressure signs.

The heart is normal, but very weak.

The radial pulse is 54.

There are several scars and partly healed abscesses over the front of the chest. The glands in each groin are enlarged.

The other systems and organs are normal.

The patient was treated by large doses of iodide of potassium. In a few days his pains were relieved, and he discharged himself, saying that he would go to sea again.

CASE VIII.—*Large Aneurism of Thoracic Aorta. Severe pain. Relieved by large doses of Iodide of Potassium.*

Margaret McLusky, æt. 37, married, a washer-woman, was admitted on the 20th April, 1876, suffering from an aneurism of the ascending portion of the thoracic arch.

Previous History.—Two months ago she felt a severe pain under the right shoulder blade. A week afterwards she noticed a small lump above the right breast. The lump has steadily increased in size, the pain has become more severe, and she has been troubled with a tickling cough.

She never ailed anything until the commencement of her present trouble two months ago. Has never had rheumatism. Has been a steady woman. She has always been accustomed to hard work, but never remembers having strained herself. Has had three children; no miscarriages.

Family History.—She knows little about her relations.

State on Admission.—She is a well-conditioned, healthy-looking woman; hair dark brown. She complains of a "heavy beating" in the chest, and of constant pain in the right breast and shoulder. The pain is at times constrictive, and shooting into the right shoulder and down the right arm to the tips of the fingers.

A pulsating prominence the size of a hen's egg is seen between the second and fourth right costal cartilages. On palpation a double impulse is perceived, and the tumour is very soft and liquid-feeling. There is impaired percussion from the clavicle to the ninth rib, absolute dulness from this point to the fourth rib, impaired percussion from the inferior border of the fourth rib to the superior margin of hepatic dulness which corresponds to the inferior border of the fifth rib. Transversely the absolute dulness commences at the right border of the sternum, and extends outwards two inches. There is impaired percussion over the

manubrium sterni, and between the right scapula and spine. The chest wall is here more prominent than on the left side. On auscultation over the aneurism two sounds are heard, both of a soft muffled character, the second being the louder of the two. There is no murmur. The same sounds are heard very distinctly in the right scapular and spinal regions.

The veins on the right side of the neck are prominent, and the base of the neck above the right clavicle is slightly swollen. There is marked difficulty in swallowing, the stoppage being referred to a point corresponding to the manubrium sterni. Respiration in the right lung is weak and jerking. Sibilant and sonorous rales are heard all over the chest; cough is frequent; inspiration is attended with a marked stridor. Her voice is hoarser than it used to be.

The heart is of normal size, the aortic second sound accentuated. The radial pulse in 84 regular, the right somewhat stronger than the left. The carotid pulsations are equal on the two sides.

She sleeps very badly because of the pain. She has a constant roaring in the right ear. Hearing in the right side is not so good as it used to be. She suffers occasionally from frontal headache.

The other organs and systems are normal.

Treatment.—Thirty grains of the iodide were ordered three times daily, and she was confined to bed.

Subsequent Progress of the case.—After three or four days she was free from pain.

On May 29th she was obliged to go home to attend upon her husband, who was ill. At the time of her discharge she said she felt quite well. There had been no pain to speak of since last note. The prominence was less marked, but the pulsation was still strong and liquid-feeling. Dysphagia and cough had gone.

CASE IX.—*Aneurism of Thoracic and upper part of the Abdominal Aorta. Obstruction of the Circulation through the Abdominal Aorta. Establishment of the Collateral Circulation.*

Thomas Ward, æt. 35, a labourer, was admitted on the 15th June, 1876, complaining of pain in the back, great palpitation, numbness and coldness in the lower extremities.

Previous History.—Patient states that he has been an unusually strong, healthy man. Fifteen months ago he first felt pain in the small of the back. A year ago his legs turned weak, and he experienced a numb feeling in the outer part of each thigh. Eleven weeks ago he began to suffer from headache, pain in the right breast, and palpitation. He has been off work nine weeks, and has been daily getting worse.

Seven years ago he had a chancre. He has been a heavy drinker. Has never had rheumatism, and knows no cause for his illness.

Present Condition,—Is pale in the face. The left pupil larger than the right. There is most powerful visible pulsation in the superficial vessels of the upper half of the trunk, head and neck, and upper extremities. No pulsation is to be felt in the abdominal aorta from a part an inch above the umbilicus downwards, nor in the vessels of the lower extremities.

The superficial epigastric arteries are the size of goose quills, and stand prominently out in the abdominal walls. They are very tortuous, and can be grasped between the fingers. The course of the circulation in the epigastrics is from above downwards. The lower intercostals are greatly enlarged, and pulsate strongly. The terminal branches of the internal mammaries can be felt pulsating in the upper part of the abdominal walls. The epigastric arteries are of a blue colour, and look like veins.

There is strong heaving pulsation and marked thrill in the pit of the epigastrium, but no distinct tumour can be defined. There is dulness on percussion over the area of pulsation. On auscultation, a loud systolic murmur is audible.

Posteriorily, there is dulness on percussion at both sides of the spine in the lower dorsal region, most marked on the left side. On auscultation over this dull area two sounds but no murmur are heard. The sounds give one the idea of being produced in a large vessel. It is over this dull area in the right lumbar region that he feels so much pain.

Two inches to the right of the last dorsal vertebra a loud, rasping, systolic murmur is audible. The murmur is heard over an area an inch square, and is apparently produced in a superficial vessel.

The patient complains of constant pains in the epigastrium and back (lower dorsal and lumbar regions), of coldness and numbness in the lower extremities, of headache, giddiness, and of palpitation.

There is powerful heaving pulsation all over the precordia. A thrill is felt in the second and third right interspaces, just outside the sternum. He complains of tenderness on pressure all over the precordia. The apex beat is seen and felt in the fifth left interspace, one inch and a half below and slightly internal to the left nipple. The area of cardiac dulness is slightly increased. There is impaired percussion over the manubrium sterni, and in the second and third right interspaces. All over the precordia a rasping double murmur is audible. The systolic portion of the murmur is louder than the diastolic. The part of maximum intensity is the base.

No second aortic sound is audible.

The cardiac pulsations are heard all over the chest posteriorly, but are quite distinct from the sounds heard over the lower part of the thoracic aorta.

A marked thrill is felt, and a systolic murmur is audible, in the vessels of the neck, especially on the right side.

The radial pulse is 102, regular, visible, and jerking to an extreme degree.

The lungs are normal.

The digestive, urinary, integumentary, and nervous systems are normal.

Treatment.—Rest in bed, and half a drachm of the iodide three times daily were prescribed.

Subsequent Progress of the Case.—After a few days the pain was much relieved, and the patient felt very much relieved.

On Sept. 8th it was noted:—He is now free from pain, the palpitation is much less, and he is gaining flesh and strength.

On Sept. 20th he begged hard to get up, and was allowed to do so for a short time during the afternoon.

On Sept. 29th he was seized during the night with a pain under the right eye. The next morning that part of the face was swollen and painful to the touch. The iodide was discontinued, and he was ordered thirty grains of compound jalop powder.

On Oct. 2nd he was very much worse, complaining of severe pain in the epigastrium, and of vomiting. He looked pale and sunken; the pulse was markedly small and quiet as compared with its former condition. A subcutaneous injection of morphia and a mixture containing dilute hydrocyanic acid was prescribed.

On Oct. 5th the vomiting had ceased, but there was constant hiccough. He was still very prostrate and weak. The strong pulsation and murmur in the epigastric region were no longer present. The urine contained one-third of albumen, a few pus corpuscles, but no casts.

On Oct. 5th it was noted: The hiccough is still very severe. Every now and again he is seized with a choking sensation at the upper end of the sternum, apparently due to tonic spasm of the diaphragm. He looks as if he were going to die.

On Oct. 8th he was very much better.

On Nov. 3rd the improvement has continued uninterruptedly. The urine still contains a trace of albumen. The iodide (half a drachm three times daily) was again prescribed.

Nov. 7th.—For the last few days he has felt a pain and burning sensation in the right breast. It is only felt when he lies down. On strong percussion, between the sternum and right nipple there is a slight dulness and tenderness.

Nov. 14th.—Very much better. The epigastric pulsation and murmur are again present, but not nearly to the same extent as on his admission. The pulsation of the upper half of the body is also less powerful.

Nov. 24th.—For the last two nights has had a return of the pain in the right breast. Has also vomited once or twice at bed-time. To take the iodide five times daily.

Dec. 1*st.*—Very much better. Has gained more than two stones in weight since his admission. Is now quite free from pain.

Remarks.—The abdominal aorta was evidently obstructed close to its origin. What was the nature of the obstruction?

"Local contractions or obliterations of the arteries," says Quincke, may occur:—

1. As a congenital condition.
2. As the result of disease of the arterial tunics (arterio sclerosis, acute inflammation with the formation of an abscess, tumefaction of the walls of the artery).
3. As the result of external pressure (from tumours or cicatrices).
4. From coagulation of the blood (thrombosis and embolism).

In this case the causes classified under the second and fourth headings may, I think, be excluded because of the position of the obstruction, and the very gradual and insidious manner in which the symptoms commenced.

That the obstruction was not due to the pressure of a cancerous tumour is also proved by the "good condition" of the patient, and the marked improvement which took place under treatment.

We are reduced, therefore, to the obstruction being either congenital or brought about by an aneurism of the aorta itself.

Narrowing of the abdominal aorta has occasionally been observed as a congenital condition; and supposing acute cardiac changes, aortic disease, and hypertrophy to have been superadded, many of the symptoms and physical signs present in this case might have been produced. All the phenomena are, however, I think, better explained by supposing the obliteration to have been caused by an aneurism, involving the lower part of the thoracic and the upper part of the abdominal aorta. In the absence of a *post-mortem*, it is, of course, impossible to say with certainty that this diagnosis is correct.

The following facts were in favour of it:—

1. The previous history. The patient had been a healthy, strong man until fifteen months before his admission to the hospital.
2. The fact that he had had syphilis, and had been subject to strain and hard work.
3. The pain in the back.
4. The pulsation and murmur in the pit of the epigastrium. The dulness and arterial sounds over the situation of the pain posteriorly. These physical signs were almost identical with those in the case of Peter McCourt.—(*See* Case V.)
5. The marked improvement under rest and large doses of idodide of potassium.

(The patient was introduced, and examined by the members.)

TABULAR STATEMENT OF DR. BRAMWELL'S CASES OF ANEURISM.

No.	Name and No. in Register.	Age.	Occupation.	Sex.	Supposed Cause.	Syphilis.	Date of First Symptoms	Complaints.	General Appearance.	Physical Signs at the Seat of the Aneurism.	Pressure Signs.	Position of Aneurism.	Condition of Heart.	Complications.	Treatment.	Course.	Result.	Days in H.	Mode of Death.	Remarks, *Post-mortem*, etc.
1	Dillon, P. 50	40	Pitman.	M.	Unknown.	Yes; nine years ago.	17 mo ago	Pain in right breast, shoulder, back, and arm. Beating in right breast, and palpitation on hea[r]t. Shortness of breath on going up an incline. Occasional cough. Inability to lie or turn on to his left side, because of pain in mid-sternum.	Dark complexioned, pale, and somewhat emaciated.	*Inspection.*—Pulsating prominence the size of a five-shilling piece between 2nd and 3rd right costal cartilages. *Palpation.*—Double impulse and systolic thrill over prominence. Tenderness on pressure over prominence, and between superior angle of right scapula and spine. *Percussion.*—Absolute dulness over prominent area. Impaired percussion over upper half of right infra-clavicular region and over manubrium sterni. *Auscultation.*—Double sound and soft systolic murmur over prominence. Absence of breath sound over prominence. Double sound behind between scapula and spine.	1. Dull pain at seat of aneurism, at times shooting up to right shoulder, down right arm to tips of fingers. Pain between right scapula and spine. 2. Inequality of the pupils, the right sometimes larger, sometimes smaller than the left. Unilateral right-sided sweating (This has been the case for nine years.) 3. Hoarseness of voice. 4. Slight dysphagia.	Ascending and transverse portions of thoracic arch.	*Considerable hypertrophy.* Apex beat in 5th intercostal space 3 in. below nipple. Transverse dulness 3¾ inches, vertical 4½. *Systolic apex murmur. Second sound* at base louder than over aneurism. *Pulmonary* sounds not accentuated. *Pulse* 74, equal in two wrists, slightly visible and jerking.	Pericarditis (dry); observed after admission.	On Admission { Pot. Iod. 3ij t. d.; Rest in bed; ℥ gr. morphia h. s. Feb. 5 { Small doses digitalis; Poultices to præcordia. „ 17 { Ferri c. quininæ c. strych. cit.; Pot. Iod. 3ij t. d.	Speedy relief of pain, and improvement until Feb. 8th, when he complained of greater difficulty in swallowing, and of pain in pit of epigastrium. To-and-fro pericardial friction murmur. Feb. 17th. Very much better. Friction gone. April 2. Greatly better. Has gained one stone in weight since his admission.	Relieved.	106		Discharged himself on April 28th, very much better. The prominence almost gone. Free from pain.
2	J. S.	36	Stoker. For 8 years soldier.	M.	Unknown.	Yes; ten years ago.	2 yea ago	Pain in chest, right shoulder, and over [illegible]. Frequent short cough. Inability to sleep.	Fair complexion. Somewhat emaciated.	*Inspection.*—Tumour size of a large orange; ultimately as big as a boy's head; projecting from middle of chest and over lower part of sternum. Apex of tumour discoloured. *Palpation.*—Double impulse in tumour, which is very soft and fluctuating. *Percussion.*—Absolute dulness over tumour and over extensive area round it. *Auscultation.*—Double sound, but no murmur over tumour.	1. Constant pain at seat of tumour, occasionally severe and constrictive. 2. Frequent tickling cough.	First portion of aortic arch.	*Heart* considerably hypertrophied. Double aortic murmur. *Pulse* 80, visible jerking, much stronger in right than left wrist.		Large opiates. Rest.	Tumour rapidly increased in size, and with it the sufferings of the patient. He died instantaneously from external rupture.	Died.		External rupture.	Aneurism remarkable for its position and size. External sac communicated with internal by two large openings at lower end of sternum. Internal aneurism consisted of three sacs. It sprang from the very base of the aorta. Was in firm contact with right cavities of heart. Wall of internal aneurism very thin. Segments of aortic valves united. Valve incompetent. Heart moderately hypertrophied. Pericardium adherent.
3	Patterson, H. 65	42	Labourer. In the habit of lifting very heavy weights.	M.	Unknown.	No.	6 mont ago,	Pain in the right breast, shoulder, and [illegible]ting in the right breast. Shortness of breath on exertion.	Fair complexion. Stout and muscular, but says he has lost flesh.	*Inspection.*—A pulsating prominence the size of an egg between 1st and 3rd right costal cartilages. *Palpation.*—Strong single pulsation in the tumour, which is soft and yielding. *Percussion.*—Absolute dulness over tumour. Impaired percussion over a space 5 inches transversely by 4 inches vertically. *Auscultation.*—Strong impulse communicated to ear; loud double murmur; *diastolic* portion musical. Murmur very audible in right supra-scapular region. The diastolic portion heard down the spine as far as the lumbar region, but not heard in the abdominal aorta in front, nor in the femorals. Absence of respiratory sounds over tumour.	1. Constant dull pain at seat of tumour. Occasional attacks of severe pain, shooting up to right shoulder and down the right arm. 2. Diminution of respiratory murmur in the right lung.	Ascending and transverse portion of aortic arch.	*Heart of natural size.* Double murmur at base. *Pulse* 66, regular, equal in the two wrists, slightly visible and jerking.		Pot. Iod. 3ij t. d. Rest in bed. Opiate for a few nights after admission.	Continuous improvement, and speedy relief of pain. Iodide had to be discontinued for a few days on March 9th, because of headache and stomach disorder. April 4th, 1875, discharged himself.	Greatly relieved.	78		Remarkable improvement. On his discharge said he felt quite well. The prominence was much less marked. In spite of advice, he went to work. Continued to work as a labourer, lifting heavy weights. Kept well until Nov., 1876. Seen on Dec. 14th, 1876. Aneurism slightly larger. Physical signs otherwise the same.
4	Foster, J. 154	54	Labourer.	M.	Unknown.	No.	5 mont ago.	Shortness of breath, especially on exertion. Paroxysmal cough. Occasional dysphagia. Dizziness and weakness in right arm.	Ruddy complexioned until his illness commenced; *now* pale and *somewhat* anæmic. Very stout and muscular.	*Inspection.*—Left brachiocephalic and external jugular veins distended and prominent. *Percussion.*—Dulness over manubrium sterni and to the left of it (3 × 4 inches). *Auscultation.*—Blowing systolic murmur over the dull area. Absence of vocal resonance and fremitus over the same. The murmur is heard, though faintly, in the left supra-spinous fossa.	1. Obliteration of right radial pulse. 2. Respiration weaker in left than in right lung. 3. Paroxysmal clanging cough. 4. Dysphagia. 5. Left pupil slightly larger than right. (Both are contracted.)	Transverse portion of aortic arch.	Heart of natural size. Soft blowing murmur at base, and *accentuation of aortic second sound.* Very loud systolic murmur in left subclavian. *Pulse* 80, obliterated in right arm.		1. Pot. Iod. 3ij t. d. 2. On re-admission same treatment. 3. Sept. 13th. Mist Quininæ Co. The iodide had to be discontinued, as it caused painful swelling of feet and ankles.	Patient improved continuously, and was discharged on July 8th. Shortness of breath very much less. Cough and dysphagia gone. He returned very much worse on July 22nd. Orthopnea. Great pain in epigastrium. Sept. 28th. Discharged himself very greatly better. He went to work. Was seen on Jan. 10th, 1876. Physical signs same. Cough troublesome. Working regularly.	Relieved.	80		
5	McCourt, P. 228	41	Marine store dealer, formerly a sailor.	M.	Unknown.	Yes; 18 years ago.	3 years a	Constant agonising pain back. Breathlessness. Palpitations and some debility. Constipation.	Fair complexion; red hair. Painful expression of countenance. Extreme emaciation.	*Palpation.*—A feeling of fulness, hardness, and resistance in epigastrium. Pulsation and thrill over same area. No definite tumour to be felt even under chloroform. *Percussion.*—Dulness in pit of epigastrium, and posteriorly over lower part of right chest. *Auscultation.*—Loud systolic murmur in pit of epigastrium. Not audible posteriorly.	1. Constant boring pain in back. 2. Constipation. 3. Partial flexure of left thigh on abdomen.	Lower thoracic and upper part of abdominal aorta.	No hypertrophy. Sounds short and valvular. Pulmonary sounds accentuated.		Pot. Iod. 3ij t. d. Rest in bed. Morphia injection h. s.	Wonderful improvement. The pain soon disappeared. The patient was able to sleep and walk about. He gained flesh, and discharged himself on Nov. 24th.	Greatly relieved.	35	Rupture into left pleura.	He continued to take the iodide at home, but would not remain in bed. He kept well and free from pain, but died suddenly some months afterwards. Dr. Bates, of North Shields, made a *post mortem*, and found a large aneurism of the lower part of the thoracic and upper part of the abdominal aorta. *The aneurism had ruptured into the* left pleura. The bodies of the 8th and 9th dorsal vertebræ were eroded. The mitral valve was contracted. The heart was of normal size.
6	Payne, Wm.	38	Sailor.	M.	Unknown.	Yes; nine years ago.	5 years a	Tumour and pulsation in abdomen. Chronic rheumatism.	Dark complexion. Anæmic and thin.	*Palpation.*—Large irregular pulsating tumour in the epigastric, umbilical, and left hypochondriac regions. Lower end of tumour rounded, and very hard. *Percussion.*—Dulness over upper parts of tumour. *Auscultation.*—Very strong, impulse communicated to the ear. Soft systolic murmur. No murmur posteriorly.	None.	Abdominal aorta.	Normal, but weak.		Pot. Iod. 3ij t. d.	Pain very soon relieved, and patient left the hospital, saying he would go to sea.	Relieved.			Two years ago pressure was made upon the abdomen for several hours. The operation was performed in the Royal Infirmary, Liverpool. Since the operation, the tumour has remained stationary, and the patient has been able to follow his employment. He does not know whether the pressure was made above or below the tumour.
7	McLusky, M. 361	37	Washerwoman.	F.	Unknown.	No.	2 mont ago.	Constant and severe pain in right breast and shoulder. "Heavy beating" in chest. Cough. Dysphagia.	Brown hair, ruddy complexion, healthy looking. Well nourished.	*Inspection.*—Pulsating tumour size of hen's egg at 2nd and 3rd right costal cartilages. Slight prominence between right scapula and spine. *Palpation.*—Double impulse over the tumour, which is very soft and liquid-feeling. *Percussion.*—Impaired from clavicle to 2nd rib. Absolute dulness from 2nd to 4th ribs. Impaired from 4th to 5th (superior limit of liver dulness). Transversely absolute dulness from right lower border of sternum outwards 2 inches. Impaired over manubrium and in right scapular and upper part of spinal regions. *Auscultation.*—Double muffled sound over aneurism, diastolic portion loudest. Absence of respiratory murmur and vocal resonance over area of absolute dulness. Both aneurismal sounds audible behind in the right spinal and scapular regions.	1. Constant pain in right breast and shoulder-blade, at times very severe, shooting down right arm. 2. Dysphagia. 3. Inspiratory stridor, with diminished intensity of respiratory murmur in right lung. Cough. 4. Prominence of right external jugular vein, and slight swelling at right side of base of neck.	Ascending and transverse portions of aortic arch.	Heart normal size. Aortic second sound accentuated.		Pot. Iod. 3ij t. d. Rest in bed.	Relief of pain after four days' treatment. On her discharge, which took place in consequence of the illness of her husband, she felt quite well; cough and dysphagia had gone. The prominence was decidedly less, though still very liquid-feeling.	Greatly relieved.	40		
8	Ward, Thos. 379	35	Labourer.	M.	Unknown.	Yes.	15 mon ago	Pain in the left lumbar region. Numbness and cold-ness in the lower extremities. Pain over precardia and in epigastrium. Dyspnœa on slight palpitation, pulsation in vessels of upper half of body; headache, giddiness; shortness of breath.	Light brown hair and eyes. Pale in face. Well nourished.	*Inspection.*—Epigastric arteries as large as goose quills and tortuous; circulation in these vessels from above downwards. *Palpation.*—Strong heaving pulsation in pit of epigastrium. No pulsation in lower part of abdominal aorta or in femorals. *Percussion.*—Dulness in left lumbar region. *Auscultation.*—Systolic murmur in epigastrium. Two sounds but no murmur over dull area in left lumbar region.	1. Pain in the back.	Lower thoracic and upper part of abdominal aorta.	Slightly hypertrophied. Double aortic murmur, systolic the louder.	Pericardial [illegible] tal.	Pot. Iod. 3ij t. d. Rest in bed.	Continuous improvement until September 29th, when he was seized with severe pain in the right side of the face. September 30th. Severe vomiting, followed by collapse and hiccough. Continuous improvement after this date.				The abdominal aorta was obstructed at its origin. The collateral circulation was established. The cause of the obstruction was diagnosed to be an aneurism of the aorta.

NORTHUMBERLAND AND DURHAM

MEDICAL SOCIETY.

THE fourth monthly meeting was held in the Library of the Newcastle-upon-Tyne Infirmary on Thursday, January 11th, 1877. The President (Mr. Morgan) in the chair.

The following gentlemen were elected members of the Society:—

Baumgartner, J. R., M.R.C.S., Newcastle.
Maling, E. A., M.R.C.S., Sunderland.
Aitcheson, J., M.B. (Edin.), Wallsend.

The following gentleman was proposed for election:—

Edward C. Anderson, B.A., M.B., Cantab., Tow Law.

A petition was laid on the table in favour of the extension of the penalty clauses of the Public Health Act.

PREVALENT DISEASES OF THE DISTRICT.

Mr. HENRY E. ARMSTRONG, Medical Officer of Health for Newcastle, stated that only one patient, a case of febricula, had been admitted to the Newcastle Fever Hospital during the past month.

The PRESIDENT said one case of small-pox had been imported into Sunderland, and had been at once isolated. Thanks to the precautions taken by the authorities, the disease had not spread. The patient was now convalescent.

PATHOLOGICAL TRAY.

Dr. EMBLETON exhibited a specimen of diseased aortic valves, and said:—Robt. Graham, æt. 45, labourer, Byker, was admitted Nov. 17, 1876. Caught cold three months ago; had pains in head and back, and general debility; two weeks afterwards began to swell, at first in face, then in limbs; is now pale, anæmic and œdematous all over. Has been an ardent-spirit drinker.

Nervous system, excepting frontal headache and dreams, fairly well.

There is cough, dyspnœa, much expectoration mixed with blood. Two weeks ago there was epistaxis - long expiratory sound, with mucous and sonorous râles, chiefly in lower lobes of lungs. Pulse full, regular, and 72 per min. A double bellows murmur over heart, masking both sounds of left side; second sound of pulmonary valves normal. Slight hæmorrhage into left retina. Appetite bad, bowels costive, epigastrium tender, ascites, liver dulness two inches below border of chest.

Pain in region of left kidney.

Urine scanty, dark and smoky, of sp. gr. 1014. Loaded with albumen. Blood cells and epithelial casts present. Urine is passed in small quantities, and with difficulty.

A mixture of tinctures of sesquichloride of iron and digitalis, and a purge, were administered, and he improved up to the end of a fortnight; after that time he began to sink, and died on the fourth of December.

Autopsy at noon, Dec. 5th, by Dr. Bramwell:—"Two milk spots on surface of heart. Left ventrical dilated, and walls hypertrophied. Right cavities somewhat dilated. Aortic valves incompetent, segments thickened and shrunk, large beautiful vegetation on mitral segment, anterior segment rough from deposit. Weight of heart 15 oz. (Average normal weight 11 oz.)

Lungs dark and œdematous; weighed the right 39 oz., the left 30½ oz. (Normal average 18 to 21 oz.)

Liver tough and dark coloured; weighed 4 lbs. 2 oz. (Normal average 3 to 4 lbs.—50 to 60 oz.)

Kidneys large and white; weighed, the right 6½ oz. the left 7¾ oz. (Normal average about 5 oz.) Capsules stripped off easily.

Spleen weighed 12½ oz. (Normal average 4 to 10 oz.) Not more stained with iodine than other parts."

In the account of this case there is nothing remarkable; it is only a plain statement of facts. The *post mortem* appearances quite correspond to the symptoms *ante mortem*, and justify the diagnosis. It has been thought as well to add the average normal weights of the organs noticed.

Dr. S. Wilson showed a brain from a case of apoplexy, and said:—The specimen which I have the honour of exhibiting to the Society to-night is the brain from a rapidly fatal case of apoplexy. The woman, aged 44, from whom this was removed was an in-patient at the Ingham Infirmary, South Shields, and was recovering from fracture of the thigh bone. She was able to leave her bed on the 20th of November last, and on the morning of the 23rd I was hastily summoned to her bedside, as she was supposed to have taken a fit. I learnt from the nurse that just before my arrival the patient had been sitting on the edge of her bed singing and pulling on

her stockings, when suddenly falling back in the bed, she complained of severe pain at the nape of the neck, vomited, and then became unconscious. When I saw her, which was scarcely three minutes after the commencement of the attack, she was lying on the bed, blanched, and apparently dead. Her pulse was beating feebly, but respiration had entirely ceased. Heat was at once applied to her feet, and although artificial respiration was kept up for some time, no respiratory effort was again made. The heart ceased to beat two minutes after my arrival. I mention this case as I believe it is very unusual indeed for apoplexy to prove fatal in such a short period as five minutes. Most writers state that some hours ordinarily elapse before death takes place after a stroke, and I think it has been said that a fatal issue never occurs suddenly. As the patient was rather spare, and not at all a likely subject for apoplexy, I should most probably have attributed her death to heart disease if I had not felt her pulse after the breathing had so completely ceased. There was no reason to suspect poisoning by prussic acid or nicotine, and no previous history of aneurism, so that I signed the death certificate apoplexy and this diagnosis was subsequently verified by a *post-mortem* examination, which resulted in the discovery of this clot, part of which you see situated at the base of the brain and surrounding the pons, and the remainder extending around the medulla and spinal cord, down the spinal canal as far as the 6th or 7th cervical vertebra, within the arachnoid. I think there can be no doubt that in this case the immediate cause of death was pressure on the medulla oblongata and upper part of the spinal cord, and not the effusion of blood into the base of the brain, as we all know that the pneumogastric, which is the afferent nerve of respiration, arises from the medulla and the phrenic, the efferent nerve from the 4th and 5th cervical, I regret that I cannot say which vessel was ruptured, as I have been unable to find the lesion.

Dr. Drummond said : It was, of course, useless to say anything with regard to the treatment of this particular case, but he wished to allude to the practice of venesection in cases of apoplexy. He had lately, through the kindness of Dr. Page, been present at the *post mortem* examination of a woman who died from hæmorrhage resulting from a wound of the jugular vein. In that case the brain was found to be greatly congested, a fact which would tend to prove that venesection in cases of apoplexy is useless.

Dr. Page showed an ulcer of the stomach, and said : I show you here, sir, a very typical example of a by no means common disease —simple perforating ulcer of the stomach. The specimen was taken from the body of a female domestic servant aged 18 years. Till within a very few hours of death very little complaint had been made of illness One morning her mistress found the girl in

bed, complaining of pains in her belly. A mustard plaster was applied, and she was allowed to keep her bed. In the evening her mistress again saw her; she had vomited, but no alarm was excited. The next morning the girl was found dead and cold in bed. She seemed to have died without a struggle. On a *post-mortem* examination the contents of the stomach were found to have escaped through an ulcer into the cavity of the peritoneum. The patient seems to have died from the shock of commencing peritonitis, and it is instructive to note that death from such a cause should have occurred in such an unexpected way. The ulcer is situated upon the small curvation of the stomach near the cardiac orifice, hence probably the little indication of disease during life. The body was well nourished and healthy in every other particular. I have seen one other case of death occurring under precisely similar circumstances.

The PRESIDENT thought it very remarkable that the patient had died withont any one being present. The pain in such a case must have been intense.

Dr. PHILIPSON presented a specimen of aneurism of the pulmonary artery, which had ruptured, and had caused speedy death. The patient, a man, aged 38, an engineer, resident at Jarrow, had been admitted into the Newcastle-upon-Tyne Infirmary, under his care, on November 25th, 1876. He had not been well for one year and seven months, but had been seriously ill for two weeks. He had suffered from cough, dyspnœa, and had expectorated purulent matter. Upon physical examination the case was regarded as one of tubercular phthisis, in the third stage, that of excavation. On December 15th, 1876, after a paroxysm of coughing, blood was ejected through the nose and mouth, and after a few gasps, he died, asphyxiated. At the autopsy the body was much blanched, the lungs were both adherent to the chestwall, the left more so than the right. The trachea and bronchi, more especially the left, were filled with clotted blood; on section of the left lung, it was found to be studded with tubercle. In the upper lobe were several large cavities, and in one cavity, near the apex, which was equal to an orange in size, and which was full of coagulated blood, there was an aneurism of the pulmonic artery of about the size of a cherry. Upon careful examination of the aneurism a point of erosure was found, which was capable of admitting a fine probe. The right lung was found to be excavated; one cavity near the centre was found filled with coagulated blood, which had evidently passed from the left lung. The heart was healthy. The liver was slightly fatty. The kidneys were both healthy. Dr. Philipson stated that the interest of the specimen was its rarity, and the rapidity of the death. Yet,

it was curious, that within a few weeks two cases had occurred in the Newcastle-upon-Tyne Infirmary. The other patient had been under the care of his colleague, Dr. Gibson. In that individual the hæmorrhage had recurred upon three different occasions, and in amount had been about thirty ounces upon each occurrence, and after the last the patient had survived for three weeks.

Dr. Bradley showed an anencephalous fœtus weighing 15½ lbs., and said: Mr. President and Gentlemen,—This specimen occurred in my practice two weeks ago, and I thought from its great weight it might not be uninteresting to you. The woman who gave birth to this rare *lusus naturæ* is 31 years of age, and the mother of seven children, six of whom are healthy. On the 26th of December, 1876, Mrs. A. was suddenly awoke by the bursting of the membranes and escape of liquor amnii, of which there was a tremendous quantity, as is usual in such like cases. I saw the woman about 10 a.m., when the head occupied the third position in a roomy pelvis, and the parts were almost dilated. I administered a dose of secale, the pains being slow, and after a labour of eighteeen hours' duration, this monster, which I now show you, was born. The third position did not rotate into the second as frequently occurs, but the head was driven down, and the case ended in a face presentation. There was no injury to the soft parts, and the mother made a good recovery. The child was a male, testes had not descended, and was still-born. Although from the absence of decomposition and the slight oozing of blood from the cut fœtal end of the umbilical cord, I am inclined to think it was not dead many hours. The next point of interest is the absence of the occipital and temporal bones together with the brain, and I should like here to ask the question as to the cause of the malformation. The popular idea is fright received by the mother during pregnancy, and in this case there was such a cause, but it happened between the third and fourth month, and we know that centres of ossification are formed in the seventh or eighth week, so that mental emotion would not account for it. Haller and Morgagni believed that the cause lay in a dropsy of the spinal cord, which tended to destroy the nervous substance, but M. C. Daveste, an eminent French physiologist, pointed out the error by demonstrating that the effusion takes place before the formation of the spinal cord, consequently hindering its development, and is the result of an extremely anæmic condition. Geoffroy St. Hilaire, Knox and others looked upon the cause as an arrest of development. I shall be glad to hear any remarks upon this interesting subject.

Mr. H. E. Armstrong exhibited a portion of the skin of a pig which had died from the disease known as "Red Soldier," and said:—The disease is recognised as a form of blood-poisoning, and

described by Gamgee as a variety of anthrax, and is said to be fatal in from three to six hours. The chief symptoms are abdominal pain and other signs of intestinal disturbance, followed by staggering and paralysis of the hind limbs. There is said to be occasional delirium or stupor. Shortly before death the discoloration of the skin, from which the disease takes its popular name, appears. The skin is also usually marked by livid and bruise-like vibices, and the blood of the diseased animals will not flow from a cut vein. Pigs brought to the town for sale are often found dying or dead in the railway trucks from the disease, and (as in the case from which the specimens were taken) are disembowelled before reaching their destination, so that the state of the viscera could not be described from observation. The flesh, however, usually showed a tendency to rapid decomposition. The specimens show a deep cherry-red discoloration of the skin, said to be due to vascular engorgement, which is not general, and is usually most marked on the under surface of the body and inner aspects of the limbs. The disease is not scarlet fever, the last named being described by Williams as affecting, among quadrupeds, the horse, and perhaps the dog, but not the pig.

Mr. Spiers said there had been many epidemics in pigs in which the symptoms of the disease so closely resembled scarlet fever as to be undistinguishable therefrom. The term "Red Soldier" was a local one; butchers were very positive that the appearance had nothing to do with disease.

Mr. Armstrong, in reply to Mr. Spiers, said: He had only quoted the opinion of the best recognised authorities on the subject of scarlet fever. Both Gamgee and Williams say it does not occur in the pig. The butchers certainly say that "Red Soldier" is harmless, but the fact remains that pigs die of the condition in a very few hours. It is not advisable, therefore, to eat the flesh of such animals.

Dr. Maclachlan: I here show you the uterus and ovaries of a patient upon whom I operated about five weeks before, for retro-uterine hæmatocele, with success, as far as the hæmatocele was concerned. The left ovary, you will see, is very much diseased, and here a large abscess formed in it, which caused general peritonitis by bursting into the peritoneal cavity, but the pus in its escape was absolutely limited to the lumbo-iliac region by a thick layer of lymph. This part where you see this bristle is the puncture I made in the posterior wall of the vagina by the aspirating needle. When I removed this specimen, a distinct layer of coagulated blood and lymph could be seen on the posterior surface; it is now blanched and not distinct by being kept in spirit. This layer of blood was continuous, and extended to the lumbar vertebræ. I

carefully examined it, and I found no connection existing with the ovarian abscess, nor with the peritoneum ; it had not a drop of pus in it. This shows that the hæmotocele, was cured and that it was distinctly separate from the ovarian abscess which caused death. I show you here a portion of the liver with the gall bladder attached, containing a calculus, as you may see; it is nearly the size of a pigeon's egg—very interesting, pathologically, as she used to complain of a peculiar gnawing pain in that region, coupled with slight attacks of indigestion now and again. I may mention that her left kidney was very soft in texture, and about twice its natural size. All the other organs were healthy or nearly so, as far as I could make out from the hurried examination one has to make in private practice.

EXHIBITION OF PATIENTS.

Dr. Arnison showed a patient with fracture of the patella, which he was treating by means of an apparatus described some months ago in one of the medical journals. The apparatus consists of a piece of stout plaster, large enough to cover the front of the thigh, strengthened with a backing of calico sewed upon it ; and to it, near the lower end, are fixed two buckles. A piece of strong wide tape, interrupted in two places where two strong india-rubber rings are inserted, passes over the foot-piece of the back splint on which the limb rests, and its ends are fixed into the buckles on the plaster, which is fixed upon the front of the thigh by a bandage. As the buckles are drawn tight, steady traction is made on the front of the thigh, and the fragments kept in close apposition. Apposition is also favoured by a short piece of plaster, fixed above and below the patella, and attached by means of elastic rings to hooks in the back splint. Dr. Arnison said he had treated two cases in this way with very satisfactory results.

Mr. Jepson said : While he was house surgeon to Mr. Callender, at St. Bartholomew's Hospital, he had at one period three cases of fractured patella under his care. One of them was a restless man, who would not allow the splint to remain in position ; it was, therefore, removed. In this patient the union obtained was much better than in the other two, which were treated by complicated apparatus.

Dr. McDiarmid related the particulars of a case of compound comminuted fracture of the patella which he had had under his care In it bony union had taken place, and the patient had free movement of the joint.

Dr. S. Wilson had lately treated a case and got an excellent result by moulding one piece of gutta percha to the thigh, and another to the leg, and drawing the two together by means of Malgane's hooks, which were fixed into the gutta percha.

Dr. Newcombe thought the great point was to get permanent union. Many of the cases which, when they leave the hands of the surgeon, are apparently well united, present a very different character after a few months.

Mr. Hopgood had seen excellent results from the use of the Malgane's hooks. In seven cases which he had observed himself very good union took place. In one of these the union was by bone. Mr. Hopgood had seen this patient twelve months after his discharge from hospital. The union was then still perfect.

Mr. Clarke said he had obtained good results from a simple starch bandage. In one case, a man 70 years of age fell out of a cart and fractured his patella. Bony union took place, and the man was now able to follow a light employment. In using the starch bandage it was most important to see that it was firmly applied, and thoroughly set with the limb in the fullest extended position.

Dr. Philipson introduced a patient who was admitted into the Newcastle-upon-Tyne Infirmary, under his care, on October 27th, 1876, suffering from aneurism of the abdominal aorta, near the bifurcation. Iodide of potassium was administered for six weeks without success. Arterial compression, by means of Lister's abdominal tourniquet, was then applied to the abdominal aorta, four inches above the umbilicus, under the influence of anæsthetics. After the third application the aneurism consolidated. The patient, a man, aged 25, a shingler, from Stockton-on-Tees, had been under the care of Dr. R. W. Foss, by whom the aneurism had been diagnosed. Dr. Embleton had examined the patient, and had agreed in the diagnosis. Dr. Philipson pointed out the site of the aneurism, the position where the pressure had been applied, and directed the attention of the members to the absence of pulsation at the site of the aneurism in the abdominal aorta and in the general arteries. Dr. Philipson reserved the full particulars of the case for the paper of which he had given notice.

Dr. Armstrong showed—I. A case of urinary fistulæ, and said: Joseph Bagnall, æt. 10, Winlaton, was injured by the passage of a wheel of a spring cart over his perinœum in the summer of 1873. He was shortly afterwards an in-patient of this Infirmary, but was not at that time under my care. On October 16th, 1876, he was admitted under me, suffering from a long and tight urethral stricture, complicated with numerous false

passages, a urethral fistula in front of the scrotum, and a vesical fistula, through which he passed the greater part of the urine, in the hypogastric region of the abdomen. Several ineffectual attempts were made under chloroform to pass a catheter into the bladder. On November 23rd I cut down upon the stricture through the middle line of the perinœum, divided the stricture, and passed a gum elastic catheter from the perinœum into the bladder and left it there. The catheter becoming plugged the same night, it was withdrawn, cleaned, and passed down the whole length of the urethra. Since then the case has gone on with uninterrupted success, beyond a slight attack of erythema. The vesical fistula is now quite healed, the fistula in front of the scrotum nearly so, the incision in the perinœum quite superficial, and the patient can readily pass the gum elastic catheter himself.

2. A case of fracture of the spine. James Horan, æt. 18, a labourer, was admitted into the Newcastle Infirmary on July 29th, 1876, under my care. Horan had jumped out of a railway carriage while it was in motion, and, between the platform and foot-board, was dragged by the train a distance of about 50 yards. On admission he was much collapsed, and complained of great pain in his back. On examination there was found a considerable quantity of effused blood about the lower dorsal region of the spine, complete loss of both motion and sensation of the lower extremities. There was obstinate constipation of the bowels and retention of urine for the first fortnight. No priapism. When the swelling on the back had subsided, lateral and antero-posterior displacement of the 11th, 12th, dorsal and 1st lumbar vertebræ was detected. With the exception of a bedsore the patient progressed without a single drawback.

The treatment was at first perfect rest and good nourishment; afterwards iodide of potassium, hypodermic injections of 1-60th of a grain of strychnia daily, and galvanism.

Horan has recovered entire motor and sensory power of his right leg, and entire sensory and partial motor of his left leg.

Dr. Anderson said: I have lately had under my care a case of urinary fistula. The patient, a young man, was run over by a cart, and the urethra ruptured, a large portion of the anterior wall of the penile urethra sloughed, and a gap an inch-and-a-half long was left in the canal; a catheter introduced into the bladder was seen bare in the canal for 1½ inches. By plastic operations I reduced this gap until the fistula exactly corresponded in size to the one in the patient which Dr. Armstrong has introduced to us this evening. I did everything I could to get this small point healed. but was unable to do so, until, at the suggestion of the patient, I obtained a piece of tin-plate, curved like a ℧, to the

urethra; the edges of the plate were perforated with small holes. I then carefully pared the edges of the fistula, brought them together accurately, and then placed over the whole the tin-plate, the sides of which were drawn together by sutures inserted through the holes. I left it for nine days and then removed it, and found the fistula completely healed. The patient got married in the middle of the treatment, but with his help the fistula was cured.

The PRESIDENT asked Dr. Armstrong whether he thought the bladder had been ruptured, or had the urine made its way from a rupture in the urethra over the penis.

Dr. BYROM BRAMWELL said the last number of the *Edinburgh Medical Journal* contained a paper by Dr. McDougall, of Carlisle, in which an account was given of three cases of supposed rupture of the bladder in which recovery had taken place. It was just possible, if in these cases the bladder had been ruptured, that the same thing might have occurred in Dr. Armstrong's case. Dr. Bramwell had lately had some conversation with Mr. John Chiene, a very rising Edinburgh surgeon, on the treatment of perineal fistulæ. Mr. Chiene had lately used in these cases a very ingenious mode of keeping the bladder empty. A catheter was introduced into the bladder when full of urine; an elastic tube full of water was then fitted to the end of the catheter; the free end of the tube was kept under water. By the syphon action the bladder was in this way always kept empty; the urine never collected in the bladder, but was at once discharged through the tube. The instrument was likely to be of great use in all cases where it was necessary to keep the urethra perfectly dry, and in cases of vesico-vaginal fistula.

It was also likely to prove useful in deterring the rapidity with which diuretic remedies acted. Dr. Bramwell believed an account of the apparatus would shortly appear in the *Practitioner*.

Dr. ARMSTRONG said he was unable to say whether the bladder had been ruptured, as he did not see the case at an early stage. He did not think the apparatus mentioned by Dr. Bramwell would have been any use in his case, for it would not have enabled him to get into the bladder, and that was the difficulty. Nor did he think Dr. Anderson's method would be of any avail, for he believed the small fistula, which still remained, communicated with the urethra, considerably behind its external orifice.

Dr. S. WILSON showed—1. Case of compound comminuted fracture of the skull with depression. This patient received a severe blow on the forehead from a crane handle. When admitted into the Ingham Infirmary he was perfectly conscious, and was found to have sustained a scalp wound four inches in length, extending in a curved manner from a point an inch above the

right eyebrow to a corresponding point above the left. On reflecting the scalp, a sharply defined depressed fracture of the frontal bone was discovered, measuring an inch in length, two-thirds of an inch in breadth, and one-third of an inch in depth. From this point the fracture extended in a starred manner all directions. Two loose pieces of the external table of the skull, each of the size of a shilling, were removed from the neighbourhood of the depressed portion, and failing to raise this latter by means of elevators, we resolved to let it remain rather than resort to the trephine. In this we followed the plan recently advocated by Dr. Gamgee, viz., to leave undisturbed even sharply depressed fractures of the skull when no cerebral symptoms are present. That gentleman seems satisfactorily to have proved that this is the proper course to pursue in the majority of instances, although we were not taught so in my time. The patient made an excellent recovery, and was able to leave the hospital in a few weeks perfectly well. The depression in the skull is still plainly perceptible to the touch.

2. Case of compound comminuted fracture of both thigh bones. This boy, who is 14 years of age, met with his accident in the following manner:—While riding in the fore part of a wagon loaded with sand his foot caught the wheel, and he was thrown on to the line, both the wheels, which are flanged, passing over his thighs. As I have seen these wagons frequently, I am able to state positively that the one in question must have weighed at least three tons. On admission, both thigh bones were found fractured at the junction of the lower third with the upper two-thirds, and a wound about seven inches long was found on the posterior surface of the left thigh (middle third) running in the direction of the limb. Through this opening the broken ends of the femur could be felt, and several small fragments of that bone were removed. There was also a wound about two inches long situated on the inner surface of the same thigh. On the posterior surface of the right thigh were found to exist two openings each about three inches in length, and through these also fragments of femur were extracted. The soft parts were so fearfully injured that amputation was almost performed. The wounds were, however, syringed out with carbolic lotion, and the limbs put up on long splints. The washing out of the wounds was continued every other day for a fortnight, and after that they were dressed with carbolic oil. The discharges found a ready exit, as the openings were below, and to this I attribute to some extent the success of the case. His temperature, curious to say, was never over 99, nor his pulse over 100 per minute. He could walk seven weeks after the accident, and at present, as you see, there is no deformity, and the patient can walk without any limp whatsoever.

CANCER OF THE BREAST OF SEVENTEEN YEARS' STANDING.

By F. PAGE, M.D.

Seventeen years ago the lady, from whose body these specimens were removed after death, had her attention first directed to the condition of her right breast in consequence of a slight injury. The injury was a blow from the elbow of a child whom she was nursing. Great pain was experienced at the time, quite out of proportion to the nature of the accident, and, upon examination soon after, a swelling was found. For two years, during all which time the pain and swelling in the breast continued to annoy her, the lady, who was unmarried, kept her malady secret. The pain, however, increasing in severity, two medical men, one of whom was at that time surgeon to the Infirmary, and both of whom were in large surgical practice in Newcastle, saw the case in consultation. There was a difference of opinion as to the nature and treatment of the disease—one surgeon pronouncing it cancer, and recommending its removal; the other looking upon it as a simple growth, and recommending its non-removal. No operation was performed, and the disease made slow but uninterrupted progress. Nine years after the accident the skin over the swelling gave way, and from that time the pain became much less severe. When I first saw the case, about 18 months before death, the axillary glands were considerably enlarged, and the breast presented very much the appearance you now see. This is a portion of the anterior wall of the right chest with the remains of the mammary gland, and you will notice the nipple is entirely gone, and very little indeed of glandular structure is left. An attack of paraplegia kept the patient confined to bed for four months, and, finally, death, materially hastened by bed sores, carried her off at the age of 60 years. On *post-mortem* examination, a deposit of cancer was found about the size of an egg in the liver, but there was nothing in the condition of the spinal cord or its surroundings which threw any light upon the paralysis. Dr. Bramwell, who, with Dr. Rowell, assisted at the examination, has kindly prepared some microscopical sections of the breast and liver which clearly prove the cancerous nature of the disease. No member of this lady's family, as far as can be traced, ever suffered from cancer, but phthisis has carried off most of them. A question of considerable surgical interest arises out of this case, viz.: Would it have been better practice to have removed the tumour when first its presence was made known fifteen years ago? Its nature at that time was at any rate doubtful, and the tumour may have been and most probably was cancer, though of a very chronic kind. It is by no means clear that life was shortened by

the presence of cancerous disease in this particular case. It would be very difficult indeed to trace any connection between the cancer and the paralysis from which the lady sank at the age of 60 years.

My own experience of removal of the breast for cancer is so exceedingly unsatisfactory that I am satisfied, when the disease is only making slow progress, and the patient has reached that time of life when the activity of the reproductive organs is past, it is decidedly better not to interfere, and even in the more acute forms I question very much, notwithstanding the argument to the contrary derived from statistics—a proverbially fallacious source—whether, on the whole, removal is advantageous. The opinion entertained by many surgeons that simple tumours of the breast are better removed, lest they should one day become malignant, does not appear to me a very weighty one, seeing that a cicatrix must be left, which would be quite as likely to be attacked by cancer as the growth removed, if cancer existed in the system, and if cancer did not exist, the presence of a simple tumour would be no more likely to provoke or favour its development than the cicatrix would. Much pain and mental anxiety might no doubt have been spared this patient had the tumour been successfully removed fifteen years ago; and, on the other hand, she might have died from the operation.

Dr. Heath said: Dr. Page had raised some questions of great interest and importance. The case which he had related belongs to a class of cases which we sometimes meet with. A short time ago he removed a scirrhous tumour from the breast of a lady æt. 40. She stated that the tumour had first appeared twenty years ago as a small hard lump. It had only caused her inconvenience for a few months. The question was whether the tumour was a cancer in the first instance, or whether it was a simple tumour, which, in the course of time, had become cancerous.

Another question raised by Dr. Page was the propriety of removing such growths, or allowing them to remain. After a long experience I am of opinion that if the tumour comes under the care of the surgeon at a sufficiently early period, it ought to be removed. I lately met a patient whose breast I had removed 20 years ago for cancer. I also have under observation another patient from whom I removed a cancer 16 years ago.

It is quite true that in some cases the original tumour withers up and becomes chronic, and we are in such cases apt to think that it does not shorten life; but it is equally true that in many of the cases secondary deposits are carried by the blood from the original seat of the disease, hence, in spite of the withering of the primary tumour, the patient's life is shortened.

I am not quite certain that the paralysis was not caused by the

cancerous condition of the system, for in that condition thrombosis is more common than when the blood is in a healthy state. It is possible, therefore, that the paralysis may have been due to this cause.

As the result of my experience, I would strongly advise the early removal of a cancerous tumour. If there are no neighbouring glandular enlargements, I should expect the patient to have a fair chance of remaining free from the disease.

Mr. H. E. ARMSTRONG related the particulars of a case of cancer, in which first one breast and then the other had been removed. The patient is now well.

Mr. SPIERS thought it was unnecessary to suppose that in all of these cases the tumour had been originally of a simple nature. Anything which lowered the vitality of the patient would tend to lower the vitality of the disease, and hence to make it more chronic. It would be interesting to know the condition of general health in these cases.

Dr. MACLACHLAN said he knew of a case in which a cancerous tumour was removed by Sir John Fife. The patient died æt. 77, thirty-nine years after the operation.

CASES OF HÆMOPHILIA.

By F. W. NEWCOMBE, M.D.

The term hæmophilia, derived from the two Greek words "Αἷμα" blood, and "Φυλὴ" a tribe or class, has been given to a complaint characterised by severe hæmorrhage, ensuing from the slightest cause—spontaneous bleedings coming on at irregular periods, frequent swellings of the joints, due no doubt to effusion of blood into them, and large patches of ecchymoses, appearing if the skin is pinched or struck.

My patients, John and Fred T., are brothers, aged respectively 32 and 29 years, have both suffered since their birth from this disease, evidently hereditary, and coming from the mother's side, which the following family history demonstrates. Their father is dead, and the rest of the family consists of another brother, the youngest, who is free from the disease and healthy, and a sister without other symptoms than that of a most profuse catamenial flow every month.

The mother living, aged 50, moderately healthy, but of a very neurotic temperament, has no symptoms of the diathesis herself, but states that after her confinements she always had a most severe loss, so much indeed as more than once to endanger her life. She had brothers and sisters, one brother was troubled all his life with the disease, hæmorrhage and swelling of the joints, and died aged 17 years, of hæmorrhage from the bowels. Another brother had hip joint disease.

Her eldest sister, married and had four children, one died of hæmorrhage at four years of age. The husband of this sister died of phthisis, one daughter is living.

Her younger sister married and had nine children, two died from hæmorrhage, only three are now living.

On further tracing back the mother's family history, I find that her mother is still living, aged 86, and that she had tendency to bleedings in her younger days, and even now her skin bruises very easily. Her father died, aged 50, in a fit.

The mother's grandfather on the father's side died young. No history. The mother's grandmother on the father's side was burnt to death. The mother's grandfather on the mother's side died aged 85, but the grandmother on the mother's side died young of phthisis. None of these were known to have any taint of the disease.

The females of the family seem to have almost escaped the disease themselves, but transmitted it to their offspring.

The symptoms manifested in the cases of these two brothers are identical; the slightest scratch will bleed for periods varying from

a day to three or four weeks, and they also have frequent bleedings from the gums, nose, kidneys, and bowels, which after a time stop, and do not seem greatly to impair their strength. In appearance they are anemic, spare, and of a light complexion, very nervous and excitable, and except for this complaint are otherwise healthy.

The worst feature of the disease is the swelling of the joints. The slightest accident, a sprain or a blow, causes a joint to swell, the first stage being one of severe agony, lasting three or four days, gradually abating into the second stage, leaving enlargement of the joint and thickening, evidently fibrine, which slowly absorbs.

In many of the joints, after frequent attacks, permanent swellings remain, causing some deformity and stiffness.

Lately, the eldest brother suffered from a hard exquisitely painful swelling in the arm, just over the axillary artery, caused by the sleeve of his coat being too tight. The whole arm was swollen, and although the tumour did not stop the circulation through the artery, the pressure on the nerves caused loss of power and sensation in the forearm and hand, this gradually returned as the tumour became absorbed.

Indeed, the whole life of these young men has been one of misery and danger, and certainly if their mother had not nursed and watched them with the greatest care and assiduity, they never would have reached manhood. However, there is always some compensation in nature, for as soon as they recover from their attacks their spirits are so resilient, that they become quite cheerful and happy, and manage to perform a large amount of work.

As regards the pathology of the disease, I am ignorant. I have frequently examined the blood microscopically, but could find nothing abnormal. It coagulates firmly, but rather slowly, it was never very florid, and frequently decidedly venous.

Dr. Legg's theory is, that there is a primary defect in the structure of the blood vessels. This may be true, but for my own part I fancy that the fault lies in the constitution of the blood itself, and is greatly due to mal-assimilation of food, and more especially of the albuminous portion. I may state they both eat large quantities of beef in preference to anything else, and I always notice a greater liability to hæmorrhage after any excess in diet, or when the liver is congested.

As regards treatment, they have been under my care for the last four years, and I have tried everything I could think of to ameliorate their condition, with only partial success.

When hæmorrhage occurs, I treat it locally with strong lig. ferri. per chl. and pressure where possible. It is decidedly the best local styptic. Internally I have given the tinct. of the perchloride

of iron, turpentine, ergot, sulphuric acid, digitalis, &c., with varying success. I think turpentine answers best. I have not had an opportunity of yet trying ergotine injected subcutaneously, but I hear it has proved useful in similar cases. I pay great attention to the digestive and excretory organs and the diet, urge a very regular and careful style of living, and great caution in the avoidance of accidents.

When the joints become affected and during the painful stage, I give large doses of morphia, both by the stomach and as suppositories. I have also used it subcutaneously, but it produced a large circle of ecchymosis and great tenderness for some time. Locally I apply warm lead lotion to the joints. In the third stage I paint with iodine to promote absorption. Between the attacks I prescribe tonics, steel, nitro-muriatic acid, strychnine, phosphorus, quinine, &c., but nothing seems to remove the diathisis, although I do think the attacks are not so frequent as formerly, and that there is a general improvement in tone.

The obscurity and rarity of the disease, gentlemen, is my excuse for bringing these cases before you, with the hope also of gaining further information on the subject.

Mr. H. E. Armstrong said: During the smallpox epidemic I attended a patient who was a bleeder. In him the disease ran a mild course, and did not, as I had expected, assume the hæmorrhagic type.

Dr. Heath said it was a curious fact that the majority of these cases came from Germany, and that it was always the male children which were the subjects of the affection. In many cases an attack of bleeding was ushered in by feverish symptoms. In young subjects the hæmorrhage was generally from the gums—at a later period from the kidneys. In the celebrated case in which Sir Benjamin Brodie tied the carotid artery for hæmorrhage from a tooth, the original bleeding ceased, but hæmorrhage from the wound continued. In some cases the German observers had found the arteries thinner than usual, owing to some deficiency in the coats of the vessels. In some cases the administration of Glauber's salts seemed to do good: the adminstration of ergotine was also much praised, by German writers. In some patients the tendency to hæmorrhage ceased under altered conditions of life.

Dr. Byrom Bramwell said he had been much interested in Dr. Newcombe's paper, and also in Dr. Heath's remarks. The fact that most of the recorded cases were German was accounted for by Dr. Legg from the fact that attention had first been directed to the disease by German writers, and hence German observers were the first to look for and to meet with cases. Dr. Legg pointed out that at first the cases were confined to particular parts of

Germany, viz., round Bonn, and one of the earliest writers on the disease was a professor in the University of that town. Dr. Bramwell had lately, through the kindness of Dr. Page, had an opportunity of seeing two cases of the disease. In one of these patients there was a large port wine stain over the face. This fact was in support of Dr. Legg's view, that the cause of the disease is primarily in the blood vessels and not in the blood. The fact mentioned by Dr. Heath that the blood vessels in these cases were abnormally thin was also in favour of this view. Again, it was found in many cases that the heart presented some malformation.

It must be confessed, however, that the pathology was at present doubtful. Professor Virchow had recently examined the body of a patient who had died from the disease, and had failed to find any structural defect in the vessels. The blood had been repeatedly examined, and had always been found normal.

In Dr. Page's patients the disease was, as is usual, hereditary, and transmitted through the mother to the sons. One of the males had married when 30 years of age, and since marriage all bleedings had ceased. This was a curious fact, but it would be very unwise to take it as a precedent. Writers on the subject highly condemned marriage, both for the males and females. The females nearly always themselves escaped, but in almost all cases transmitted the disease to their male children.

The treatment recommended by Dr. Newcombe seemed to be the best which could be adopted.

Dr. Newcombe, in reply, said he should not have expected hæmorrhagic smallpox in Mr. Armstrong's case. With regard to the pathology, he thought the blood was primarily at fault. One of his cases had tried marriage, but without effect upon the bleedings.

RETRO UTERINE HÆMATOCELE,

By Dr. MACLACHLAN, M.B.

I was most urgently called to see Mrs. R.—— on October 12th. On enquiring as to how she was, her answers to my questions were so definite and pithy, that I cannot do better than repeat them now. She said: I have been married nine years, and had two children. The first was born ten months after I was married, and the other last February. My husband has been away in America for seven years. He has been home now for some time and away again. I was never ill in my life except at my confinements, and when I had the smallpox, about five years ago; I had a severe attack of it; but made a good recovery, and have been well ever since until now. Indeed, I did not know what sickness was till then and this time. My last labour was very easy, baby was born before the doctor came. I mended well and quickly. I had plenty of milk, but baby died when it was seven weeks old; I do not know what was the cause of death. I had no bother with the milk; "it went just away." I have been regular for the last three months, and I was just better the day before I took ill. Yesterday (October 11th) I attended to my household duties as usual, had neither ache nor pain; in the evening I went to a chemist's shop for some medicine (C.O.), and while waiting in the shop, all of a sudden I felt dizzy, faint, and pained back and front, just as if I was in labour. The chemist gave me some medicine, but the first dose of it made me worse instead of better, so I took no more of it (Mist F. Per). I had dry hot flannels on nearly all night, but am no better. I was never like this before; I do not know what made me ill, for I was so well before this attack. I cannot account for it at all." I saw her for the first time, as I mentioned, on October 12th. I found her in bed, having a peculiarly anxious expression, bathed with perspiration, complaining of great pain in the pelvic region, and inability to pass urine, though anxious to do so. I examined the abdomen, and found the bladder very prominent, apparently much distended. I passed a gum elastic catheter, and removed about 30 oz. of urine perfectly normal in appearance. This relieved her very much. I then examined her per vaginam; the first thing that met the finger was a round elastic tumour, filling nearly the whole cavity of the pelvis; the os uteri, or its whereabouts, could not be felt at first, but with patience and some tact it was found high up and immediately behind the symphysis pubis. After some trouble I passed the sound into the cavity of the uterus, and found that organ moveable, and distinctly separate from this tumour; the rectum was completely filled by it, having

one finger in the rectum and another in the vagina, the fluid condition of its contents became very distinct, nothing of it could be felt above the brim of the pelvis, certainly the fundus uteri was more than usually prominent, and slightly increased dulness was elicited on percussion posteriorly. Both iliac regions were resonant, pressure upon the tumour externally, or in the vagina, did not give much pain, but increased the faintness Pulse 60, weak; temperature $98\frac{3}{5}°$, respiration easy; the whole body covered with profuse perspiration, tongue clean, bowels were relieved gently and efficiently the day before. By way of medicine, I gave a morphia suppository and an acid mixture, ordered her to keep in bed, absolute quietness, and to take plenty cold beef tea.

October 13th. Had a much better night, painless, no alteration in tumour.

October 14th. Slept fairly last night; does not complain of pain, bowels relieved, able to pass urine freely. P. 70, R. 20, T. $98\frac{3}{5}$.

October 19th, 10 a.m. Has improved very much in every way, appetite good, and tumour *much* less.

Second Attack.—In the evening of the same day I was sent for to see her again, as she had taken very ill since my morning visit. I found her very prostrate, exceedingly pale, anxious in expression, sweating most profusely, complaining of great pain in lower part of the abdomen, and inclined to be sick.

On examination, the tumour was completely altered from what it was in the morning both in size and shape. Now it could be felt as a semi-elastic round body extending up to the navel, having what I will call a roundish nodule in front, which the sound proved to be the fundus uteri, still partially movable, but not so free as before. The extreme length of the cavity was $3\frac{1}{4}$ inches. The body of the uterus was strongly anteflexed, pressing severely on the bladder, and thus causing much irritation in that organ. The inclination to micturate was very great, the efforts frequent but futile, so that the catheter had to be used more than once. The urine was loaded with urates and albumen. Sp. g. 1025.

The shape, size, and situation of the tumour corresponded to that of a pregnant uterus about the sixth month; both iliac regions were still resonant, contrasting strongly with the central division, which was absolutely dull on percussion.

By palpation a peculiar sensation was communicated to the hand, quite different from the thrill of ascites—in short, it had to be felt to be known. On examination per vaginam, a tense elastic tumour was found, which filled the whole pelvic cavity, slightly tender to touch. The slightest pressure produced a feeling of faintness as before.

Oct. 20th. Had a slight but distinct rigor during night. Abdomen tender, particularly over the tumour. Very thirsty; had no sleep. Ordered poppy fomentations, and to continue treatment.

Oct. 21st. Abdomen much distended and very tender all over; distinct peritonitis; delirious; tongue furred and dry. P. 120 wiry and small, R. 30, T 104°. Ordered a turpentine stupe, and to continue fomentations.

Oct. 22nd. Had several rigors during night and day. Peritonitis increased; tumour very tender to touch in the vagina; very delirious. P. 130, R. 32, T. 104½.

Oct. 23rd. Had more rigors; vomiting everything; conscious only at times; constantly muttering. Tumour apparently larger and more tender to touch. P., R., and T. same as yesterday.

Oct. 24. Had a very bad night. Abdomen very much distended, exceedingly resonant on percussion. P. 150 small and irregular, R. 45, T. 105⅕. Eyes dull and heavy; stupid; apparently dying. Being fully satisfied that this was a case of retro-uterine hæmatocele undergoing degeneration and causing inflammation of surrounding tissues, I determined to relieve my patient by emptying its contents with the aspirator, if possible. I immediately examined both rectum and vagina for the usually prominent spot of which we have heard so much in our text books, but such a spot could not be found. The tumour both in the rectum and vagina was uniform, elastic, tense, and tender. I inserted a large aspirating needle into the most prominent part as found in the vagina, and removed about fifty ounces of bloody fluid, such as I show you in this bottle. The stink from it was literally abominable. Under the microscope it was found to consist of blood, pus, crystals, and granular matter. Almost immediately after aspirating, she said "Oh, I'm so much better; the pain is gone, and that lump of lead that was in my back is gone." Stimulants were administered (iced brandy), after which she slept for some time, and awoke refreshed, felt better, and certainly looked better. P. 140 firmer, T. less, R. easier. Abdomen less distended, and not nearly so painful on pressure. The uterus resumed its natural position, by the speculum it had a normal appearance; no discharge of any kind from the os. In the posterior wall of the vagina the point of puncture could be distinctly seen on a level with the os, as you may see where this bristle is inserted.

Oct. 29th. Going on well, has not had a single bad symptom—a little sanious discharge came from the puncture in the vagina yesterday—to-day none.

Nov. 17th. For nearly three weeks she has been so well that I paid her an occassional visit only—she felt so much better and stronger that it took some coaxing and threats to keep her in bed—I told her that she must stay in bed till after the next menstrual period—for caution's sake. Having mentioned the case to Drs. Page and Drummond, they both saw and examined her at this stage.

THIRD ATTACK.

In the evening of the same day I was sent for to see her again—I found her held much in appearance and symptoms as in her previous attacks—with this difference, viz., that the pain felt was in the left side, she had no bearing down, no disturbance of the uterus, bladder, or rectum—no enlargement of any kind could be detected after a very careful examination; but over the left ovary, pressure produced acute pain so much so that she could not bear the slightest touch; ordered the same treatment as before; P. R. T. normal up to this time, appetite good, slept well, bowels regular.

18th. Same as yesterday, but inclined to be sick.

19th. Had several rigors during night; feels very sick, vomiting everything; abdomen much distended and tender as before; only the left iliac region only dull on percussion, the rest all resonant; bowels acted freely; urine loaded with urates and albumen Sp. G. 1,027. Ordered beef tea enemata and ice. I will not trouble you with daily details, as you may see them in a more concise form in this chart:—

PULSE, RESPIRATION, AND TEMPERATURE CHART OF THIRD AND LAST ATTACK.

Day of Disease.	Pulse.	Respiration.	Temperature.
1	130	18	103°
2	112	30	103·6
3	100	36	101·8
4	108	30	102·2
5	116	36	102·2
6	112	36	103·6
7	120	38	104·
8	112	40	103·2
9	120	36	103·8
10	108	40	103·6
11	180	56	104·6
12	200	60	108·

21st. Much easier, had a good night, not so sick.

22nd. Took some food, said she felt better, slept fairly, dulness increased in left iliac region, and exceedingly tender on the slightest pressure; could not detect any fluctuation.

24th. Slept badly; much worse; dulness increased and more diffused over the whole of the left lumbar and iliac regions; has had severe rigors.

28th. Continued for the last four days much the same. To-day the perspiration stands like beads on the face. Pulse exceedingly small and wiry. Abdomen much distended, but strange to say, not nearly so painful on pressure as it was, except on the left side; bowels relieved twice freely and naturally, said "she felt wearied and prostrate," it makes no difference what she takes, it is vomited almost immediately.

29th. Conscious, but sinking fast, she died in the evening. You will notice the very high temperature attained before death, viz.,

108°. I only attended one before that reached a higher temperature viz., 112° half-an-hour before death.

Nov. 30th. Autopsy. Omentum, peritoneum, and mesentery were one aglutinated mass, bluish black in colour, and in patches; deeper in appearance on the left side. A huge abscess occupied the whole of the left side, communicating with the left ovary, and confined by a very thick layer of lymph, forming a sort of pyogenic membrane. After sponging carefully, I examined the region of the hæmatocele, but nothing could be seen or felt as to its whereabouts. I then made an incision in the recto-uterine space, and found a layer of coagulated blood and lymph extending up to the second lumbar vertebræ. It contained no pus, nor had any communication with the cavity of the peritoneum. You may see the appearance the parts had very well indeed in this specimen, only altered by the spirit in which it has been kept.

Bowels congested and distended with gas. Kidneys—right healthy, left enlarged and soft. Heart healthy; spleen normal; lungs healthy; liver enlarged and soft; gall bladder containing a calculus, as you have seen, certainly an interesting pathological specimen.

REMARKS.

The first thing to be noticed in this case is the suddenness of the attacks, their number and peculiarities; the effect they produced at the onset, viz., syncope and most profuse perspiration, and that, at the time, without increase or diminution of P., T., or R.; the sudden formation of the tumour, its situation, character, and the effect it had on surrounding organs; the mode of treatment adopted, and its excellent result, as shown by the P.M. The complications were both numerous and serious, viz., diseased liver, kidney, and ovary, the latter ending in inflammation, abscess, peritonitis, and death.

This is an exceedingly instructive case, indicating the value of the aspirator and its safety, even in such severe and complicated cases as this one has been. This large sac was emptied by it of its contents, not only without pain, but with positive relief and apparent cure. I have used the aspirator now several times in similar cases with the best results.

The PRESIDENT said there was at present in the Sunderland Infirmary, under the care of one of his colleagues, a similar case to the one which had just been so well related by Dr. Maclachlan. In that case a free incision had been made, and a large quantity of stinking decomposing fluid withdrawn. A large drainage tube was then introduced. The patient was now convalescent.

Dr. NEWCOMBE asked if Dr. Maclachlan had used any antiseptic precautions.

Dr. MACLACHLAN said he had dipped the needle in carbolic oil,

before introducing it. No other antiseptic measures were used, nor would they have been of any use whatever. The original disease was completely cured, as proved by the condition of the sac of the hæmatocele at the *post mortem*. The patient had died from an entirely different cause—rupture of an ovarian, abscess into the peritoneum—peritonitis—death.

NORTHUMBERLAND AND DURHAM

MEDICAL SOCIETY.

THE fifth monthly meeting was held in the Library of the Newcastle-upon-Tyne Infirmary on Thursday, February 8th, 1877. The President (Mr. Morgan) in the chair.

The following gentleman was elected a member of the Society:—

Edward C. Anderson, B.A., M.B., Cantab, Tow Law.

PREVALENT DISEASES OF THE DISTRICT.

Mr. HENRY E. ARMSTRONG presented the following:—

Return of Admissions to, and Deaths at, the Newcastle Fever Hospital, during the month of January, 1877.

	No. Admitted.	Died.
Typhus	1	1
Enteric Fever	5	—
Scarlet Fever	1	—
Total	7	1

Nothing particular to remark about any of these cases.

DR. MACLAGAN said: There is at present an epidemic of typhoid at Prudhoe. The epidemic is clearly due to infection by milk. The first case occurred in the house of the man who sold milk to the village. In the course of a short time many other cases occurred. Twenty families were supplied with this milk. In seventeen, one or more cases of typhoid occurred. The sale of the milk was stopped by a magistrate's order. There have been no new cases since.

PATHOLOGICAL TRAY.

Mr. MORGAN showed—1. A necrosed tibia, and said: The little patient, from whose leg this bone was taken, presented the unusual pathological condition that the whole shaft of the tibia had died, and that there had been no deposit of provisional callus thrown out around it. She belongs to the class of scrofulous blondes; her blue eyes with long lashes, rich pouting lips, and dilated alæ nasi,

with flaxen hair, being very marked characteristics. When she presented herself at our Infirmary, the skin over the tibia had just given way, and the dead bone could be both seen and felt. The head of the fibula was pressed upwards, behind, and above the external condyle, evidently from having to bear the child's weight when she attempted to use the limb. On dividing the skin the whole shaft was easily taken away from epiphysis to epiphysis, and by-and-bye the wound healed, and the child, with assistance of a light splint to take the place of the absent tibia in supporting the knee, is able to walk very well. The disease appears to have originated in a blow upon the shin, followed by periostitis and necrosis.

2. A cast of a case of dislocation of the radius backwards. J. R., æt. 18. Five weeks before coming to me, he fell and hurt his elbow, but the pain was so slight that he has continued working till to-day (May 19, 1869). Where the elbow has become more painful, and the motions more limited on examination, the joint can be freely moved, save that extreme flexion, extension, and supination is impossible. The hand is prone. The head of radius can be felt close to and touching the olecranon. All attempts at reduction failed, and as the motions of the arm were tolerably free, he was let alone. Now, after eight years, the motions of the joint are wonderfully improved.

3. Casts of three cases of diseased bursæ patellæ. It sometimes happens that a group of cases of the same character occur in one's practice at the same time, though no such cases may have occurred for very long before, or will occur soon again. Such has been the case with me, in having met with five instances within the past year of bursæ patellæ, so diseased that extirpation was needed. The first two were in the same woman. These casts represent the enormous masses to which they had grown. The right was hard and firm and painless, but the left had begun to break down ; had ulcerated, and was discharging a horribly offensive debris, and was very painful. Under antisceptic precautions, I removed them both, without opening the fascia, or joint. The right wound remained antiseptic, and healed rapidly, but the left had to be poulticed after the first dressing. The tumours consisted of densely packed laminæ—layer upon layer—and in the centre of the right a softened mass, evidently the commencement of suppurative discharge. In the left, the process had advanced further, and the whole mass would, in process of time, have sloughed out. Fifteen years, at least, had elapsed since this woman had first perceived it. The next case was one somewhat similar to the left. It was, however, not so large, and was easily dissected out. The fourth is represented by this cast. It occurred in a charwoman, and was of precisely a similar character, the laminated mass having broken

down, suppurated, and left a painful fistula. It was operated upon in the Infirmary, and healed rapidly. The fifth case was in the person of an innkeeper's wife from South Shields. The mass was just beginning to inflame. The operation presented no difficulty, was not done antiseptically, and the patient returned to Shields in 10 days with the wound healed.

Mr. H. E. Armstrong said he wished to remark with regard to the petition which was on the table for signature, that it was not entered on the notice paper. He thought petitions ought not to be introduced in such a loose and irregular way.

The President said he was about to ask Mr. Armstrong and the other gentlemen who had papers to read, if they would allow Dr. Eastwood to take precedence and to read his paper first, Dr. Eastwood had come from a distance, and would explain in his paper the nature of the petition. It was very important that it should be signed as soon as possible, in order that it might be presented to Parliament.

Mr. H. E. Armstrong said: He would object to the proposed alteration, not from any personal motive but as a matter of principle.

Dr. Heath showed—1. The excised joint-ends of the humerus ulna and radius, and observed that these specimens were interesting as showing the effect of hereditary syphilis in bone. The bones were hard, dense, heavy, and contrasted strongly with similar specimens removed for strumous disease. The head of the radius was entirely denuded of cartilage, and presented a remarkable example of a circular syphilitic ulcer. The end of the humerus was similarly affected, but not in so marked a manner. The olecranon depression presented a similar ulcer to that on the radius. The operation performed varied from the ordinary one, the point of the olecranon having been preserved in connection with the tendon of the biceps in the hope of avoiding the loss of extending power so often observed after excision of the elbow joint.

2. A cystic tumour removed from the neck. Dr. Heath said this was an example of a cyst in whose wall a sarcomatous growth had sprung up. The lining membrane of the cyst was exceedingly vascular, and covered with minute vegetations like papillæ or villi. These were at that time intensely congested, and gave the interior of the cyst the appearance of being spotted with bloody points. This appearance had become manifest during the operation, and was caused by straining to vomit; previously the interior of the cyst had appeared smooth, and there was no blood points on the lining membrane. The solid growth developed on the cell wall had been examined microscopically by Dr. Barron, who found it to consist chiefly of round cells. The patient had first consulted

Dr. Heath about July, 1876, when the cyst was inflamed and contained pus, and was laid open by a free incision; it was at that time as large as a hen's egg, and appeared to originate deeply from beneath the sterno-mastoid, but projected in front of the anterior edge of that muscle. At that time no solid growth was detected in the cyst wall. The cyst contracted after it was opened, and by the time the wound healed, there was so little to be felt of it in the neck, that it was hoped the cavity had been obliterated. In November, 1876, however, the patient was admitted into the Infirmary, the cyst again distended. It was freely laid open, and a drainage tube inserted. The fluid in the cyst at this time was yellowish, moderately clear, and contained cholestrin. At the posterior and deep part of the cyst some thickening was now felt. The patient's recovery was retarded by an attack of erysipelas, and when this had completely disappeared the cyst was again found to be distended, and a considerable growth of solid substance was discerned deeply placed under the sterno-mastoid. The removal of the whole disease was, therefore, determined upon. The growth was found to have extended and deep attachments, and a careful dissection was required to separate it, in the course of which, the Styloid process with its muscles, the internal carotid, jugular vein, and the deep nerves were exposed. The patient had done well; there had been no suppuration, and the wound was then, about fourteen days after the operation, nearly healed. The case was interesting as an example of an apparently simple cyst—hydrocele of the neck—being converted, after repeated inflammatory attacks, into a cystic sarcoma.

Dr. R. A. Smith showed a large vesical calculus, and said: A. B. was admitted into the Sunderland Infirmary, August, 1876, suffering from incontinence of urine. On admission, patient presented a miserable appearance; he was greatly emaciated, and seemed to suffer much pain. His intellect was weak, and had been so from birth. His friends stated he had suffered from inflammation of the bladder more or less for two years, and during that time had been under treatment for about twelve months. Upon introducing an instrument, it was found he suffered from a calculus in the bladder. His condition from this time became worse; he was seized with most obstinate vomiting and diarrhœa, and died at his own home, where he had been removed. *Post mortem* twenty-four hours after death, made by Dr. Murphy. The large calculus which I exhibit was removed along with the bladder. The latter was found to be ulcerated, a condition I suspected before death. The weight of the calculus is $9\frac{1}{4}$ oz., and belongs to the uric acid variety.

Dr. Page showed—1. a large mammary tumour, and said: I show you here, sir, a very good specimen of mammary glandular

tumour. I removed it from the left breast of an unmarried woman, aged 30 years. It was situated behind, above, and to the outside of the mammary gland, surrounded by a loose capsule of cellular tissue, and had but very slight attachments to surrounding parts. The mammary gland itself was not in any way implicated in the growth, but was simply pushed on one side by it. The tumour weighs nearly 3 lbs. An incision 10 inches in length was needed to remove the growth; but I am happy to say, under antiseptic dressing, with free drainage by means of large India-rubber drainage tubes, recovery has taken place by first intention throughout. The history given me of the cancer was that, last February, patient received a blow upon her left breast from the horn of a cow, but noticed no swelling till the following May, since which date the tumour had increased in size very rapidly. Patient complained of inconvenience arising from the size of the tumour, and sought its removal on that account alone.

2. I have much pleasure, sir, in bringing before the notice of the Northumberland and Durham Medical Society this book of "Outline diagram forms for clinical case books," drawn and arranged by my friend, Dr. George Rowell. It is quite unnecessary for me to say one word in recommendation of the "forms." The drawings are simply admirable. Already the work has attracted considerable attention. The diagrams were very favourably noticed in the surgical department at the late Exhibition at Vienna. They are in daily use at the Leeds, Manchester, Birmingham, and Edinburgh Infirmaries; and I am sure only require to be more widely known to be adopted by every large surgical hospital where clinical instruction is given, or careful records of cases are kept.

Dr. Byrom Bramwell showed the spleen of the case of leucocythæmia, which was exhibited by him at the October meeting. The patient refused to have the organ removed, and left the hospital. In January, he was re-admitted, very much worse. All internal treatment having failed, two electrolysis needles were introduced into the tumour, and a weak current of electricity passed between them. The operation was attended with little pain. Two days afterwards an abscess formed beneath the abdominal wall. It was opened under antiseptic precautions. The patient died a few days afterwards. A regular *post mortem* was refused, but permission was given to remove the spleen. The organ was much enlarged, measuring vertically $12\frac{1}{2}$ inches, and transversely $8\frac{1}{2}$ inches. Its weight was 5 lbs. $13\frac{1}{2}$ oz. The parts where the needles were introduced could not be discovered. The electric current had apparently caused little or no effect upon the splenic tissue. The organ was adherent anteriorily to the abdominal wall. The abscess had formed between the spleen

and the parietal peritoneum. Dr. Bramwell said he was unable to account for the formation of the abscess. The needles were well insulated, and were introduced fully three inches into the spleen itself. It was important to note that no effect had been produced upon the splenic tissue.

In reply to various questions, Dr. BRAMWELL said the patient had not suffered from intermittent fever. The needles were composed of steel, and were coated, except at their points, with vulcanite. The object of the treatment was to produce increased tissue changes, and it was hoped absorption of the enlarged organ.

EXHIBITION OF PATIENTS.

Dr. HEATH showed two patients; first, a boy of 12, with webbed fingers, the fore-finger in each hand being free. A piece of India-rubber tubing had been inserted through the web at the cleft between the middle and ring fingers and between the ring and little finger of each hand. It was hoped that a skin-lined channel would be formed at the cleft, which would thus be prevented from re-uniting after division of the webbing. The fingers would be completely separated by division of the web, in such a way as to leave a flap for each finger, as soon as the skinning of the canal was complete. The edges of each opening showed already the beginning of the process of skinning.

Secondly, a young woman of 23, who, in consequence of some mental distress, had been suddenly visited by an attack of epilepsy, to which she had not previously been subject. In the fit she had fallen so that her left hand had come in contact with the fire, and had been severely burned. During the healing of the burns all the fingers and the thumb had grown together, so that at their extremities the fingers could barely be distinguished from each other. An example of artificial webbing had thus been produced, in comparing which with the case of congenital webbing, Dr. Heath thought the members of the Society might take some interest. The thumb had already been successfully separated from the fore-finger, and was moveable and a useful thumb. Dr. H. hoped successively to separate the fingers, and thus to restore the usefulness of the hand.

The PRESIDENT said Elliot, of Dublin, had performed the operation in the same manner; he had used a silver wire intead of gutta percha tubing. Mr. Morgan had seen very good results from the wire, and thought it was cleaner than the tube.

Dr. HEATH said he preferred the tube to the silver wire, because the opening made by it was cleaner. The tube could be made quite aseptic, and was then as clean as the wire.

SECOND PAPER ON CHARBON.

By HENRY E. ARMSTRONG, M.R.C.S.,

MEDICAL OFFICER OF HEALTH.

Since the date of the former communication on the outbreak of Charbon in Newcastle there has been no extension of the disease in the borough. Several cases have, however, been reported in the locality from which the hay was derived. Additional information has been gained by visiting the spot, as well as by referring to authorities on the literature of the subject, and questions of pathological import have presented themselves in the course of the inquiry, which may not be without interest and use to the Society.

With respect to the extent of the epizootic in the surrounding district where it is thought to have originated,—of the places visited, at one farm the loss has amounted to eight cows, four horses, and two sheep; at another to five cows and two horses; at a third to three cows. These deaths by no means represent the entire mortality.

An apparently new feature in the epizootic is the conveyance of the disease by means of turnips. At the place where the three cows died, the cattle in the byre had been fed for four or five weeks—and, so far as could be ascertained, without ill effect—on turnips grown in a certain field on a neighbouring farm where the disease had been prevalent. A fresh supply of turnips was then carted from a different field on the same farm, some of which were given to the cattle, and next night one of the cows took ill of Charbonous Fever, and was killed on the following day, being at the point of death. Within four days two other cows were slaughtered on account of the same disease.

It is a question whether the turnips in this case were organically affected by the land on which they were grown, or whether they were merely vehicles of contagium. As Splenic Fever had been for some time and, at the same date in question was still, prevalent at the farm on which they were grown, the turnips may have been manured with infected dung, or the cart in which they were conveyed may have been previously used for the removal of offal of diseased animals. The grower of the turnips grants that the dung of the affected cattle was used for manure, but states that it was not applied to the turnip land. He states also that the cart used for the removal of the offal was not employed for the carting of the turnips to his neighbour. There is, therefore, no proof of either hypothesis as to the turnips being media of contagium. There appears to be no doubt, however, that they were concerned in its spread.

On being asked whether he had ever lost any stock by sudden death before what is considered the beginning of the present outbreak—namely, last spring,—the grower of the turnips stated that a year past Martinmas a heifer was found dead in the field, but from what cause he could not tell. At a neighbouring farm (that on which the hay, already referred to, was grown) it was ascertained that a cow died last year. The cause was not recognised at the time, but the symptoms corresponded somewhat with those of cattle afterwards dying of splenic fever. Neither of the two last cases are included in the deaths of the present outbreak.

Part of the land of the last mentioned farm consists of swampy haughs at a height of about from 16 to 18 feet above sea level. A channel of stagnant water, spreading here and there into expansive pools and coated with duckweed and scum, extends across one of the fields, upon which it is said to be dammed back by the rising tide. The grass of the other parts of this field is rank, tufty, coarse, readily uprooted, and in some places almost rotting on the ground. The channel, to which horses and cattle have access, is said to receive sewage among its contents. Bordering other adjoining fields is a deep gutter of dirty-looking liquid, which was stated to be the sewage of a neighbouring village, and whose banks afford a final resting place to the decomposing bodies of numerous quadrupeds that have perished beneath its waters.

It should be stated that very much of the other land in the locality lies also at so low a level as to render proper drainage impossible.

The common opinion of the owners of stock affected by the disease appears to have been that the animals were poisoned, in the ordinary acceptation of the word, and several analyses of the viscera and contents of stomach of the animals have consequently been made, but, as may be surmised, without throwing any light on the subject.

The strictly accurate term "blood poisoning," used by some veterinary surgeons, in speaking of the disease, appears to have confirmed this belief. The bailiff of the farm on which the suspected crop was grown at first held the general view, and could not think the hay would carry the disease by *infection*, although he could give no other reason for his stock having suffered severely and, notwithstanding the knowledge that some of his own cattle had eaten it with impunity after it had been steamed. On our second visit some weeks afterwards, and, subsequently on a third, at which Mr. C. Stephenson was present, the bailiff acknowledged himself unable to resist the force of evidence, the disease appearing to him to have followed the hay wherever it had been used for food, and he admitted his belief that this had been the cause of all the mischief.

Whilst, as stated in the former paper, the idea of poison by human agency was shared by the owners of affected stock in Newcastle—(and by some this idea was tenaciously adhered to) the symptoms and course of the cases being beyond the range of their experience as a disease—there was no hesitation on the part of these owners in accepting the hay as intimately associated with the death of their animals.

In speaking of the land of one of the farms, allusion has beeu made to the sewage which is said to find its way there. Without intending to convey that the present epizootic is due to sewage—of which there is no proof—it is probably not erroneous to assume that if soil become saturated, grass tainted, or water polluted with this liquid, cattle feeding on that grass or drinking that water will be liable to different forms of zymotic disease, of which Charbon may be one. In this no reflection is intended against sewage farms, for it is only just to allow that land carefully irrigated by a limited supply of sewage is one thing, and land swamped with it is another.

Samples of the hay are submitted. That marked A is very coarse and straw-like. The other samples are finer. That marked B was sold to a Newcastle dairyman by the foreman of the farm above-mentioned. The samples A, C, and D were all supplied by a hay-dealer who is known to have bought hay in considerable quantity from the same farm. The sample D—which resembles that of B—was said by the dealer to have been brought from Carlisle, but this may have been after the local growth became suspected. If the above statement be correct, there may still be ground for suspicion against the hay, as there has been a recent outbreak of Splenic Fever in Cumberland, and the produce of the infected land would be likely to find its way to the Carlisle Market. The outbreak in Cumberland is reported in the *Journal of the Agricultural Society*, vol. xii., second series.

No further cases of extension of Splenic Fever to the human subject have come under observation.

Whilst pursuing the investigation in the country, we were told that a butcher had got poisoned in the arm after opening one of the diseased carcases. The medical attendant, to whom we wrote, considered the case one of phlegmonous erysipelas.

The hand of a Newcastle cowkeeper was bitten in an attempt to extract a supposed turnip from a diseased animal's throat. The wounds, though ugly, healed without any ill result. The fingers of the cowkeeper's wife, who administered the medicines to the cows, were affected by an ecthymatous-looking eruption, which she attributed to the saliva of the cattle. The cuticle afterwards peeled off, but no constitutional symptoms appeared.

The foregoing constitute the chief points of information gathered on the recent outbreak in this district since the date of the previous paper.

Writers on the subject of Charbon dwell on the virulence of the contagium, and its prolonged vitality even after what would, for other zymotic diseases, be considered disinfection. The "Dictionnaire des Sciences Medicales" (A.D. 1820), in the library, under the head *Pustule Maligne*, states that the principle of contagium clings with almost indestructible tenacity to the skin and hair of diseased animals even after processes of manufacture or many years' use, as furniture, &c. Insects may carry it.

Bollinger (article Anthrax in Ziemssen's "Cyclopædia of the Practice of Medicine," vol. iii., English translation) says :—"The tenacity of the anthrax poison—bacteria—is very great. In the dried state the Bacteria are able to preserve their virulence during months, and even many years. Davaine succeeded in producing Anthrax by inoculation of dried anthrax blood twenty-two months old. Einike relates the following case as very well illustrating the virulence and tenacity of the poison :—The skin of an ox (from whose flesh two horses got Carbuncle) which died of Anthrax in the fall of 1852 was soaked in the following spring in the water of a pond, and then made up by a saddler into harness. The saddler got Carbuncle. From a flock of sheep which were washed in the pond four weeks later, twenty perished in a few days of Anthrax; and both of the horses (for whom the new harness was made), after they had worn it for a few days, died of the disease in forty-eight hours."

The following are extracts from the same article :—The infectious material is there described as consisting of a vegetable parasite. The disease is stated not to be contagious in the ordinary sense of the term. The poison is, however, highly transmissible, and though a fixed one may be diffused through the air, and most often enters the body by the lungs.

Pasteur concluded that the life of the Bacteria depended on the presence of oxygen. By the action of the *Schizo-mycetes* (Bacteria and vibriones) a rapid oxidation takes place in organic bodies, the products of which are oxygen and carbonic acid, &c. The oxygen of which these fungi absorb a considerable quantity in this process, is got from the air (when it reaches them), otherwise from the organic substance itself. Hoffmann and Cohn prove that the life of the Bacteria depends on oxygen which they greedily absorb. Davaine found that by sealing up anthrax blood in five glass tubes to the entire exclusion of air and consequently of oxygen, that the Bacteria died in a few days, and inoculation with such blood would not produce Anthrax.

Bollinger believes that he has proved that Bacteria by rapid increase in the blood, by their need for, and chemical affinity for, oxygen, take it away from the red corpuscles, and considers many of the symptoms of Anthrax as merely signs of poisoning by carbonic acid in the blood.

It has been suggested that there is no proof of the case of human disease recorded in the former paper being one of Splenic Fever. The symptoms as already described, however, correspond so closely with the following description by Bollinger that, short of a *post mortem* examination, stronger proof could not well be expected :—

Symptoms of Intestinal Anthrax in Man.—"The symptoms often first appear as debility and depression, with pains in the limbs, a general sense of malaise, pains in the head, dizziness, ringing in the ears, followed very soon by disturbances in the alimentary canal. The patients complain of loss of appetite and gastralgia ; there is moderate swelling of the belly, and, in many cases a slight difficulty of swallowing. With an increase of the general symptoms, vomiting commonly sets in, followed by a painless, moderate, or more or less intense, often bloody diarrhœa, whereby, in very acute cases, the patients very quickly fall into a cholera-like collapse. As a rule also, there are present, difficulty of breathing, cyanosis, great restlessness, excitement or somnolence, loss of consciousness ; or the patients are fully conscious, and only complain of great pain in the head, or a moderate, sometimes colicky, pain in the belly. The breathing is difficult and accelerated; the pulse small and frequent ; the temperature very slightly elevated in those cases where the thermometer was used. In several cases epileptiform convulsions were observed, tetanic spasms of the upper extremities, opisthotonos and great dilatation of the pupils. In one case (E. Wagner) the course was irregularly intermittent. Localizations of the disease are frequently found in the integument in the shape of little carbuncles, a diffuse phlegmon or gangrene. On the mucous membranes of the cavities of the mouth and nose bloody suffusions and hæmorrhagic collections are seen. There is a continued bleeding from the mouth, and the escaped blood shows a lack of power of coagulating. In the cases thus far observed, with one exception (case of Leube) the termination was always fatal, either within the first twenty-four hours, or after two, three, five, or seven days, with symptoms of cyanosis, asphyxia, and the most extreme collapse."

Since the reading of the former paper it has been suggested that the idea of Bacteria in the blood is an exploded one, and that the supposed organisms are shreds of tissue, &c. On this point I ask leave again to quote Bollinger, who remarks that since 1855 these bodies have been considered by various observers as bits of fibrin, shreds of tissue, blood crystals, &c. Davaine, in 1863, pronounced them Bacteria, after which there was much confusion as to these and other bodies found in the blood. This confusion, says Bollinger, has been set at rest by microscopical and experimental proof.

In the course of the inquiry, certain matters have appeared to the writer to be worthy of further investigation ; indeed, in

passing, the study of the general pathology of the lower animals is a subject of much importance to the human race, and from the comparative facilities for its prosecution, should be one of the greatest interest to the medical profession.

Perhaps one of the most striking of these matters is the difference of fluidity of the blood in different parts of the same diseased body—that in and near the heart being thin and watery, that in the spleen thick and tarry. The same conditions, but in less marked degree, occur in other human zymotic diseases, but chiefly in Typhus. Another point of resemblance between Typhus and Splenic Fever, and one probably also depending on the same cause, is the occurrence of vibices and petechiæ, whose number, depth of colour, and extent appear to be in relation to the severity of the case in both diseases. In Malignant Pustule, at the second or third day, Bacteria are said by Bollinger to be found chiefly near the centre of the tumour, and in little groups, afterwards spreading outwards to the entire organism. Whether the same grouping of Bacteria exists in the blood of Splenic Fever and Typhus, and if so, whether the Bacteria, by their affinity for oxygen, break up the fibrin of the blood and so cause its greater fluidity in certain places, are questions for solution. The observed cases of Charbonous Fever in man have differed widely from human Typhus in general symptoms, but the appearance of the blood in one disease resembles that in the other.

Charbonous Fever also resembles the petechial and hæmorrhagic forms of Malignant Smallpox in which the fluidity and tendency to extravasation of the blood is remarkable, weals and petechiæ being prominent symptoms in the former, and sanguineous oozing from all the mucous surfaces, the chief sign in the latter.

From what has been said as to the vitality of the Charbon virus, it can scarcely be expected that we have seen the last of the epizootic in this neighbourhood. If continental experience be paralleled by the present case, we may have a recurrence of the disease from time to time, or even the establishment of a confirmed Charbon district.

In conclusion, the cordial thanks of the writer are due and are here tendered to Dr. Philip Brown and other gentlemen who have aided in the investigation.

LIGATURE OF SUBCLAVIAN ARTERY IN ITS THIRD PART FOR AXILLARY ANEURISM.

By G. Y. HEATH, M.D.

Mr. President and Gentlemen,—The application of a ligature to the third part of the subclavian artery, although not an operation of every-day occurrence, can hardly, at the present time, be looked upon as a rare procedure, nor, in spite of the mortality which has attended it, are examples wanting in which the result has been a brilliant success. In 1834, Lizars threw, as he called it, a flaxen thread ligature round the subclavian for axillary aneurism; the wound was healed in four days. Nevertheless, so little in this particular branch would surgery seem to have progressed, even up to quite recent times, that I find Sir W. Fergusson stating, in a clinical lecture, delivered at King's College, in March, 1871, that in spite of the exceptional opportunities enjoyed by himself for seeing cases of aneurism, he had only met with one case, other than the one of which he was speaking, of axillary aneurism, in which he could recommend an operation. This case died of pyæmia on the 18th day.

The cases collected into statistical tables also by Scarpa, Norris, Travers, and Koch, agree in showing a mortality of about 50 per cent.; whilst Holmes, speaking in his lectures on "Aneurism of Axillary Artery," gives his opinion that the ligature of the subclavian, in its third part, should not, as a rule, be undertaken unless other means had previously been tried.

The snares and pit-falls which lie in wait for the hand of the surgeon are many, and there is not one in which it has not at one time or other been caught; a cervical nerve-trunk has been tied instead of the artery, the pleura has been wounded, the great vein has been wounded, and the ligature has included part of the vein with the artery; the artery itself has been pierced by the aneurism needle, and lastly, more than once the sac has been punctured.

So, too, are the dangers which beset the patient after the operation numerous: hæmorrhage, pyæmia, cellulitis, inflammation within the chest, and suppuration of the sac. From one or other of these mischiefs the greater number of the deaths after this operation have occurred.

It would seem, therefore, desirable that every case in which the subclavian is tied should be recorded whatever the result, and almost that the surgeon who undertakes the operation is called upon to justify his practice. For these reasons, I have thought it right to bring the present case before this Society. For the details of the case I am indebted to the notes of my dresser, Mr. Craig, as they appear in the case book of the Infirmary.

The patient, James Drummond, æt. 48, a cooper by trade, was admitted on Nov. 23rd, 1876. He was a big man; tall, broad-shouldered, deep-chested, and muscular.

A large pulsating tumour occupied the left arm-pit, reaching upwards to the collar-bone, and downwards to the base of the pit. The pulsations were visible to the eye, particularly where, immediately below the collar-bone and above the upper border of the small pectoral muscle, they were less restrained by the muscular walls. To the hand the pulsation was distinctly aneurismal, and the contents of the aneurism chiefly fluid. The finger passed readily down upon the subclavian artery on the first rib, but strong pressure was needed to stop the beating of the aneurism, and, although the collar-bone was not tilted up, the great muscular development of the man caused the artery to lie at a considerable depth behind the collar-bone. There was no swelling of the left hand. The left pulse was weaker than the right, and that hand colder. The left pupil was dilated. The patient complained of aching pain in the shoulder, back, neck, and arm; of loss of power and numbness in the fingers. On examination, the heart, lungs, and great vessels within the chest were found to be sound; the sight of the left eye not materially affected; the urine free from albumen, and its sp. gr. 1012.

History.—Patient did not know any cause of his disease. Had not had syphilis, nor recently happened any accident, was temperate, in early life had been a pugilist, but after his marriage had given that up, although he had always continued to be able "to take his own part." In March, had felt what he called rheumatic pains in the shoulder, and trouble in using his two-handed cooper's hammer. In June, first noticed a lump in the arm-pit. This lump grew slowly, and by September had nearly filled the hollow. He at that time could not grasp objects with the left hand so cleverly as before, and the fingers had become numb. He sought advice, and was told to poultice the swelling, thought to be an abcess. Being advised to see Dr. Ward, of Blyth, he consulted him and was at once told the nature of his disease.

Operation.—On the 28th of November, five days after the patient's admission, I tied the subclavian artery, in its third part, with a carbolised catgut ligature—No. 1.

It would be superfluous to detail all the steps of the operation, but it may be interesting to mention some points in which it differed from the mode of procedure advised by some writers, as well as a difficulty—the only one met with—which somewhat prolonged the proceeding. The perpendicular incision divided the skin and platysma together; the deep fascia of the neck was not raised up by a director pushed under it and then divided upon the director, but was simply pinched up by forceps and opened near the base of

the omohyoid triangle. The external jugular vein was drawn aside by an aneurism needle, and was not divided or tied; no other vein or arterial branch was seen before coming upon the subclavian itself. After raising the fascia, the cervical nerves were first discovered. On their inner side lay a yellowish object, not unlike, at first sight, the arterial sheath, but which turned out to be the crossing lymphatic gland usually found here, and some fat. These were removed, and beneath was the artery coming from behind the anterior scalenus. The great vein lay in front, separated from the artery by a distinct space. At no time during the operation did the vein rise up swollen and overlap the artery. The artery was larger than natural; dilated, but not distended with blood; it looked and felt flaccid, it could not be seen to pulsate, and, to touch, its beat was feeble and indistinct. Its compression immediately stopped the pulsation of the aneurism. An unarmed aneurism needle was now gently passed under the artery at its lower and inner side between it and the vein, and now it was that the only difficulty in the operation occurred. I have said that the artery was enlarged, but flaccid, not distended with blood; thus it happened, that as the needle was pushed under and round the artery, its flaccid coats were pushed on before the needle. A careless or impatient thrust would have pierced the coats of the vessel; the needle had therefore to be a little withdrawn and passed on again. More than once this manœuvre was required, but I was fully bent upon passing my needle close round the artery as it lay over the upper edge of the rib, and to do this, without either injuring the pleura, unduly lacerating the connective tissue, disturbing the connections of the artery, or injuring this latter. I persevered therefore patiently, until by a little humouring, I succeeded in passing my needle as I wished. It was then threaded with a No. 1 carbolised catgut ligature. No force was used in tying the artery. It was tied firmly, but not with such tightness, as, nor with the intent, to divide the inner coats. On tightening the ligature, pulsation ceased in the aneurism.

The operation was performed antiseptically, and a small drainage tube was used. The patient certainly did not lose an ounce of blood during the operation. The temperature taken by the nurse in the right arm pit immediately after the operation was 100°. There was a good deal of pain in the arm at 3 p.m., for which an under-skin injection was made. The patient ate a hearty meal at tea time, and at 6 p.m., the temperature was 98·6 and pulse 72. The after-progress of the case is easily told, for indeed there is little to tell. The patient had simply no symptoms. There was no fever, no pus; a natural pulse and circulation; some of the sutures were removed on the 4th day, the remainder and the drainage tube on the 6th, when the greater part of the wound was closed, and all

of it superficial. On the 14th day, cicatrization was complete, except a small part at the drainage tube opening. The patient, from the evening of the day of the operation, expressed himself as feeling perfectly well, and that were it not that he was relieved from the pain in the arm he should not have known that any operation had been done. On and after the 30th Nov., pulsation was just perceptible in the radial.

REMARKS.

It would be, I think, sir, a mistake, when the treatment adopted in any given case succeeds, to conclude, therefore, that the treatment was the best possible. As ligature of the subclavian for aneurism has been so often unsuccessful, and as there are other methods of treating the disease, it may be worth our while briefly to consider if in this case any other treatment would have been likely to succeed as well, or better, than that adopted, and also to ascertain as far as possible why the ligature in this case succeeded. The character of the aneurism, in a consideration of this sort, is of first importance, and I had no doubt that I had a sacculated aneurism to deal with, placed most probably below the origin of the acromial and superior thoracic arteries, and above the origin of the subscapular and circumflex branches. The old operation of laying open the sac seemed to me quite inadmissible here—forbidden by positive and negative reasons. A troublesome and bloody operation (for in Mr. Symes' first case, in spite of the preliminary exposure of the subclavian, there was a "tremendous gush of blood") would have taken the place of a comparatively simple and almost bloodless one. Important muscles must have been cut across, thus endangering the after usefulness of the arm; the vein would have been in some danger, whilst in the position occupied by the aneurism, the brachial plexus would be found, perhaps surrounding, certainly on either side, of the sac. Moreover, the actual results of Mr. Symes' cases are not altogether encouraging, for in one of the two cases of axillary aneurism, in which he performed the old operation, the patient's life was endangered from cellulitis, and in the second, death actually occurred. The most favourable result was obtained in Mr. Symes' first case, which was really one of ruptured artery, for which the ordinary rules of surgery prescribe the cutting down upon and tying the ends of the severed vessel. Some years ago, I performed this operation for diffused aneurism of the femoral. The patient originally had an ordinary sacculated aneurism about mid-thigh, and refused the pressure treatment proposed to him. He returned to me at the end of a fortnight with an enormous swelling occupying the whole thigh, extending from a little below Poupart's ligament to near the popliteal space, and presenting only an indistinct impulse coincident with the pulse. Here ligature of the femoral would have probably been followed by gangrene, and the result of pressure was

doubtful. The case had, in fact, been changed from one of aneurism to one of ruptured artery. The great cavity was freely laid open, the blood-clot turned out, and the ends of the artery, separated by some distance, tied. Although circumstances rendered it necessary to operate by candle-light, no great difficulty was experienced, and the patient made a good recovery. The negative reasons against laying open the sac in the case of axillary aneurism under consideration were also cogent. The sac, although large, did not reach the collar-bone, which was not unduly elevated, so that there was nothing to render the subclavian inaccessible.

Thus, in deciding against the old operation, it will probably be acknowledged that the procedure put aside did not offer certainly a better prospect of success, and in all probability a very indifferent one. There was more temptation to adopt the pressure treatment, and it was not rejected without thought and some regret. In this Institution the pressure treatment in aneurisms differently situated has been so successful as to give us a predisposition in its favour, and I should have had great pleasure in adding a cure of axillary aneurism by pressure to our other successes. Although it is not difficult to stop the beating of an axillary aneurism by compression of the third part of the subclavian against the first rib, it *is* difficult to maintain the pressure for a sufficient length of time. It is infinitely easier, for example, to compress the common iliac at its origin against the body of the fourth lumbar vertebra, and to keep up compression effectively, than to carry out the same process with the subclavian against the rib. Mechanical pressure cannot with facility be adjusted to the subclavian, and in the greater number of cases in which pressure has been successfully applied in this situation, finger-pressure or hand-pressure with a compressor has been used. The pressure has usually also been intermittent, and the cure has extended over a considerable period—weeks, and even months. In one of the latest cases, Erichsen's, the patient, an old man of 71, was under treatment from June 23rd, 1873, to Sept. 20th of the same year. The patient was at one time delirious, and the hand and arm, after cessation of pulsation, swollen and dark in colour. In another case, Mr. T. Smith's, in which pressure was attempted, it was given up in consequence of the intense pain, which could not be endured for more than a few seconds. The subclavian was afterwards ligatured, and the patient died of pyæmia. The aneurism in my patient was large, occupying the whole armpit; its pulsations were vigorous, and its contents apparently chiefly fluid. Knowing the difficulty of applying continuous pressure in this position, and that intermittent pressure would have to be adopted, I thought it probable that, before any decided effect was produced upon the fluid contents of the sac, an aneurism already so large, beating so vigorously, and already making its way to the clavicle,

would have the opportunity of increasing and extending its boundaries; thus the treatment by ligature, should it ultimately be required, would be rendered more difficult. The depth, too, at which the subclavian was placed, owing to the large muscular development of the man, although also constituting a difficulty in the way of ligature, offered still greater obstruction to the effective application of pressure. These considerations—aided by my recollection of a case under my own care, very similar to the present, in which pressure under chloroform and ether, assisted by the injection of a few drops of the liquor ferri perchloridi, was used, with a result successful as regards the aneurism, but followed ultimately by the death of the patient—determined me to adopt the ligature. Moreover, the employment of a carbolized catgut ligature seemed likely, according to the experience of Lister and others, to secure the patient from at least one of the dangers which have so often proved disastrous after the operation in question. Neither the procedure by manipulation, nor the application of the continuous galvanic current, seemed to me applicable in the present instance, both having proved exceedingly uncertain in their results, and not free from danger.

After this brief examination of alternative methods, I still believe that upon the whole the best was chosen. No mode of treating aneurisms can, in my opinion, equal pressure in its almost complete immunity from danger where it is thoroughly applicable, and it was with regret, and only from believing it unfit for use in the present instance, that I abandoned the idea of employing it. The successful issue of the operation may be attributed to a combination of causes: my patient was fortunate in the possession of a good constitution, an admirable frame, and a calm North-country temperament. Among minor causes may fairly be reckoned the small amount of injury inflicted upon the structures during the operation; no director being thrust under the fascia, or blunt instruments used to lacerate the cellular tissue; the artery and the parts adjacent being also in no way disturbed.

Something may also be ascribed to the antiseptic treatment; but I do not put so much weight on this, for a clean wound in a healthy man may be expected to heal under any judicious treatment, and quite similar wounds not treated by the antiseptic method have healed as quickly, and more quickly than the present—*e.g.*, Lizar's case; Sir A. Cooper's case of deligation of the femoral with ordinary catgut, where healing took place in four days; also, Porta's case of ligature of carotid, with ordinary catgut cut short, the wound healing in four days. Nevertheless, it is fair to remember that the operation in my case was performed antiseptically, and the wound from the first most carefully and systematically dressed according to Lister's antiseptic system, that a drainage tube was employed, and that no accumulation of fluid did, or could, occur in

the wound, and that such slight serous discharge, as there was, from first to last was perfectly sweet and aseptic. These conditions would certainly favour the slow and gradual softening of the ligature, and its incorporation with the internal coat of the artery and exuded lymph. With regard to the spray used at the operation, I may observe that although not afraid of it, as Mr. Maunder says he is, I did find that the thick mist from the steam spray now and then obscured the wound, and added a trifle to the difficulties of the operation.

A few words with regard to the ligature employed, and the mode of tying the artery—to both of which I should feel inclined to ascribe a large share in the success of the operation—may not be out of place. The ligature was sent from Edinburgh, from Gardner, I believe, and was the thickest of three sizes, that which he styles upon his bottle "No. 1." I mention this because so many different stories are told of the way in which catgut ligatures behave, that it would seem most desirable that the thickness and other qualities of the implement used in any given case should be known. It was fairly pliable, and not very elastic; strong enough to resist a powerful tug even, and without any apparent flaw. As I stated in the account of the operation, it was tied with a single knot, and, as I believed, not so tight as to divide the internal coats of the vessel. The effect of an ordinary ligature, tied in the usual way, is well known. The artery, sooner or later, is completely divided, and if the healing process is not completed, and the artery not thoroughly closed when the division takes place, bleeding is inevitable. The prepared catgut ligature is expected to act differently. It may or may not divide the internal coats; its action in this respect probably depending upon the way it is tied; but there is an almost universal agreement that it does not usually, or necessarily, cut the external coat, and hence does not sever the artery. At a variable period after application, the antiseptic catgut ligature would seem to soften, loosen its hold upon the artery, and be either altogether absorbed or partially so, its softened and disintegrated remains becoming blended and incorporated with the external coat and the surrounding exuded lymph. Supposing these results actually to take place, and no such damage to have been done to the external arterial coat as to lead to subsequent ulceration or sloughing, the subjacent parts to be early consolidated about the artery, and the wound quickly healed, it is plain that the danger of hæmorrhage is removed. In the present case, fortunately, there has been no opportunity of verifying the condition of the ligature, but, the patient being alive, the aneurism cured, and no pulsation having returned in the artery, the probable inference is that the subclavian is closed, and the ligature either absorbed or incorporated with the artery.

The use of the antiseptic catgut ligature, providing it acted in the

manner stated, would remove the danger of hæmorrhage; but bleeding is by no means the most common cause of death after ligature of the subclavian; cellulitis, pericarditis, affections of the pleura and lungs, and above all, suppuration in the sac, occurring even some time after the operation, are accountable for the greater number of deaths.

The early closing of the deeper parts of the wound, and complete absence of putrid change, would go far to secure the patient from secondary infective disease. Suppuration in the sac, occurring, as it sometimes does, at a distant period after the operation, might be supposed still possible, if it really ever arises within the sac from intra-saccular causes independent of pus-generating action in the outside cellular tissue. But as it is exceedingly doubtful that this ever happens, and most probable that suppuration in the sac is, for the most part, if not always, a secondary result of change in the cellular tissue spreading from the site of the ligature and along the sheath of the artery, most likely by infiltration of unwholesome discharge from the wound, I feel pretty easy on this score.

To sum up, sir, in conclusion, I am inclined to maintain, always with deference to any opinions that may be expressed by members of the society, that the treatment adopted in the present case was not only successful, but upon the whole, the most likely to succeed of the modes of treatment which have been used in similar cases, and that the success may fairly be ascribed, first to the patient's own excellent constitution and sound health; and after this, to the character of the operation, the material and nature of ligature employed, assisted by the careful and minute carrying out of the antiseptic system during the operation and in the dressing.

The PRESIDENT congratulated Dr. Heath on the brilliant result, and said the case reminded him of a patient who was under the care of himself and Dr. Welford, in the year 1862. The aneurism was subclavian, of great size, and the fingers of the affected side were clubbed. Neither Mr. Welford nor himself thought the case a very favourable one for operation. The patient was accordingly sent to Mr. Syme, of Edinburgh, who decided to operate, and did so in their presence. He first dissected out the subclavian artery, and gave it to Mr. Lister to hold; he then freely laid open the aneurismal sac, turned out the clots, which weighed four pounds, and tied the vessel above and below. Unfortunately, the case died some days afterwards from pleurisy.

Dr. NEWCOMBE said he begged to congratulate Dr. Heath on the success of his case, which, he believed, was unique so far as the Newcastle Infirmary was concerned. He had listened with much pleasure to the physiological deductions which Dr. Heath had drawn from the effect of the catgut ligature. In some cases the

catgut ligature had slipped, and fatal hæmorrhage had taken place. He had noticed one case in which the pedicle of an ovarian tumour had been tied with catgut. In that case the ligature had softened and slipped its hold. There was one other method of treating aneurism, which had lately been discussed in the medical papers, viz., the application of Esmarch's elastic bandage. Dr. Heath had not mentioned that method in his paper.

Dr. Heath, in reply to the President, said: Sir, your account of the axillary aneurism under your care, and of the operation performed upon it by Syme, is most interesting, and tends to confirm my opinion, that the old operation of laying open the aneurismal sac would not have been a desirable plan in the present case. The condition of the rib as part of the wall of the sac, and the consequent exposure of the chest-contents during the operation reveal a danger had not thought of as likely to happen in such a procedure. Your case was evidently an unfavourable one for any treatment, but it could hardly do well under the plan followed. Ligature of the subclavian or pressure, if possible, might have had a better result.

Dr. Newcombe has called attention to the recent striking result of the use of Esmarch's bandage in a case of popliteal aneurism. I was aware of this case previously, and intended to include this form of pressure in the general remarks made under that head, as I do not think the bandage would have been more applicable to the present case than any other form of pressure. In a smaller aneurism, the bandage, applied to the arm, and the India-rubber tube tourniquet, furnished with a pad for the artery, might be serviceable. Dr. Newcombe has also stated that hæmorrhage has more than once taken place after the application of a carbolised catgut ligature to the cut end of an artery, in consequence of the premature softening of the catgut, and mentioned an instance where this took place, I think, after ovariotomy. It is quite true that if softening and relaxation, or absorption of the catgut, applied to a divided artery, happen before the cut end of the artery has become thoroughly consolidated, bleeding is highly probable, and the sooner after the tying that this change occurs the more certain the bleeding. This disaster, sir, seems to me, however, to threaten us more after tying a divided artery, than after putting a ligature round an artery in its continuity. In fact, what do we ask of the catgut placed round the open end of an artery? that it should keep its hold until the union of the arterial wound is complete; that its softening and absorption should be delayed until repair is finished, and a strong organised barrier formed against the flow of blood. Since hæmorrhage is so rare after deligation of open arteries by the antiseptic ligature, rare compared to the every-day frequency with which such ligatures are now used, we must infer that the catgut

does, with few exceptions, hold until such union takes place. But what do we ask of the catgut placed round an artery in its continuity for the cure of aneurism? Simply, that it should hold until the aneurism is consolidated; and that it should not injure the coats of the artery. The early solution of the catgut, then, so long as the aneurism is consolidated, in this case is an advantage, a thing to be desired; for the sooner the softening of the catgut takes place the less likely are the arterial coats to be injured.

That a long time is not required to bring about coagulation of the contents of an aneurismal sac, we know from the results of the rapid pressure treatment. In one of my cases, a large ilio-femoral aneurism extending some distance above and below Poupart's ligament was consolidated in ten hours; in another, smaller, but still of considerable size, consolidation was complete in four hours.

The effect of the various instruments for temporary compression of arteries points also to the quickness with which the contents of aneurism solidify. Thus, to the femoral artery, Prichard, of Bristol, used a temporary ligature of horse hair secured to a tubular machine, so that the hair could be easily removed. On the third day the ligature was withdrawn, the aneurism having for some time been solid. Dix, of Hull, has several times effected solidification of aneurism by means of the wire-compress. He states that, in 24 hours after entire obstruction of flow of blood, consolidation is complete. It must be observed also, as an important point in the argument, that as a rule the artery is not closed at the pressed part: whether the method employed be the rapid, slow, or intermittent form of pressure, or the clamp, temporary ligature, or wire-compress. A good many years ago a popliteal aneurism was cured in this Infirmary by ordinary slow pressure; the man afterwards died of erysipelas. The femoral artery after death was found patent, and was injected down to the sac. In my own cases of rapid pressure the arteries remained patent down to the sac. In Dix's case of carotid aneurism, the carotid artery, after withdrawal of the wire, beat up to the sac.

In Bickersteth's case, it is true that, after 48 hours' compression of the innominate by a clamp, pulsation returned in the aneurism-subclavian. The innominate, however, is a very large artery, and from its position the force of blood in it must be very great; and as the aneurism was of the third part of the subclavian, blood would reach the sac by collateral branches. Had the circumstances of the case admitted the retention of the clamp for 24 hours longer, probably the desired effect would have been produced. It may be taken at any rate as a settled point, that the blood in an aneurismal sac will generally become sufficiently clotted to establish the cure of the aneurism after from 4 to 48 hours' complete obstruction of the current of blood through the main trunk of supply, and that the

artery may remain patent even to the aneurism, and yet its contents persist in their solidity, unaffected by the flow of blood through the artery. If, therefore, the catgut hold on for 48 hours, that will, in the majority of cases, be all that we require of it as regards the aneurism, whilst the artery is less likely to be injured by so short an embrace. The conditions discovered by the examination of the parts in those cases where death has ensued from some cause, after the use of the antiseptic catgut ligature, prove that for the most part the catgut does hold for a longer period than 48 hours, and, in fact, where the fatal result has arisen in connection with the ligation of the artery, injury to the arterial wall has been the cause, rather than the yielding of the ligature. I have collected fifteen cases, in which the death of the patient, from divers causes, at various periods after application of the ligature, permitted an examination to be made. It would occupy too much of the time of the Society at this late hour to give the details of these; but I may say, that they bear out the view already stated, viz., that what we require from the ligature, which is applied to an artery in its continuity, for the cure of aneurism, is, that it should hold until the aneurism is consolidated, *i.e.*, say from 24 to 48 hours, that it should soften, be partially absorbed, and its remnant incorporated with the artery and surrounding structures before damage has been done to the arterial coats. Also, that the antiseptic catgut ligature does actually behave in this way, a suitable ligature having been selected and tied with a view to such action. Lastly, that the differences which have been observed in the behaviour of the ligature are chiefly due to the difference in the thickness and other qualities of the individual ligature, and to the mode in which it has been tied by different surgeons.

A ligature which can be absolutely relied upon to hold for a specific time and produce a specific effect upon the artery, according to the object to be effected, is no doubt still a thing to be sought after, and it will be interesting to the society to know that Mr. Lister is now engaged upon experiments designed to produce a ligature of this description.

TWO CASES OF ANEURISM OF THE ABDOMINAL AORTA,

ONE CURED BY THE ADMINISTRATION OF IODIDE OF POTASSIUM, THE OTHER BY ARTERIAL COMPRESSION.

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During the year 1876, two hundred and sixty-seven patients were admitted at the Newcastle-upon-Tyne Infirmary, under my care, of whom one hundred and eighty-three were in-patients, and eighty-four were out-patients. Of the whole number, four were suffering from aneurism, one of the arteria innominata, and three of the abdominal aorta. Of the three cases of abdominal aneurism, I propose giving the particulars of two. The third patient was only eight days under treatment, and left the institution of his own accord, and without the permission of the resident or other officials. For comparison, therefore, this case is of little value, and, consequently, will not be recounted or considered.

Case No. 1.—Robert R., aged 26, labourer, married, living at Crook, in the county of Durham, was admitted into the Newcastle-upon-Tyne Infirmary, under my care, June 8th, 1876.

He stated that he had been unable to follow his employment for nine weeks, in consequence of pain in the back, which pain was severe and passed round the abdomen to the region of the umbilicus, where, at times, it was excruciating.

Upon carefully examining the abdomen, a faint pulsatile prominence was seen near the umbilicus, at which situation, upon placing the hand flat, yet firmly, a pulsation was felt, more to the left of the umbilicus, which pulsation was expansile in character. At the spot where the pulsation existed there was dulness upon percussion and a blowing systolic murmur was heard. Upon auscultating the left vertebral groove, a distinct systolic murmur was heard. The respiration, over the whole of the chest, was of natural frequency and character. The heart sounds were normal.

He was of sanguineous temperament, and in good nutrition. He had no knowledge of having sustained a fall, blow, or strain, and denied ever having suffered from syphilis.

The case was regarded as one of aneurism, from the following physical signs:—The pulsation visible, perceptible, and expansile; the dulness upon percussion, and the murmur heard at the site of the pulsation in the abdomen and in the left vertebral groove; and, further, it was inferred that the aneurism was of the abdominal aorta from the situation of the pulsation, and of the variety, lateral, sacculated and not peripheric, dilating, from the pulsation and the dulness being to the left of the umbilicus.

The patient was selected for the Clinical Medical Examination for Degrees in Medicine of the University of Durham. The diagnosis was corroborated by my colleagues, Dr. Bramwell and Dr. Arnison, both of whom were co-examiners with myself.

He was ordered to maintain the horizontal position in bed, to take ten grains of iodide of potassium in one ounce of water three times each day, and to have the ordinary meat diet.

June 15th.—Of his own accord, he mentioned that he was sensible of a beating in his abdomen, and that he had experienced a beating for fully six weeks previous to his admission. The iodide of potassium was increased to fifteen grains.

June 24th.—The pulsation was decidedly less forcible. The iodide was increased to twenty grains.

July 1st.—He still complained of pain in the back and round the abdomen. The pulsation was less expansile. No murmur was heard. The iodide was increased to twenty-five grains.

July 8th.—Still paroxysms of pain, which have been accompanied with difficulty in micturition. The iodide was increased to thirty grains.

July 15th.—Pain less severe, more continuous. Upon careful palpation, scarcely any pulsation is felt. The iodide was increased to thirty-five grains.

July 22.—Now very little pain. Scarcely any pulsation. The iodide was increased to forty grains.

July 29th.—No pulsation visible or perceptible. No murmur.

August 12th.—As no pulsation had returned, or murmur was to be heard, he was allowed to leave his bed for a portion of the day. The iodide was continued, in doses of forty grains.

The condition of immunity from pulsation and from murmur continued, and he left the hospital, on October 7th, 1876, to resume his occupation. He was instructed to present himself after an interval of two months, which he did on December 20th, 1876, when, after very careful examination, no pulsation was detected, nor was any murmur heard. He expressed himself as feeling well, free from pain, and had been able to continue at work as a general labourer.

Case, No. 2.—John H., aged 25, married, a shingler at the iron works, living at Stockton-on-Tees, was sent to me by my friend Dr. R. W. Foss, of Stockton-on-Tees, on October 20th, 1876, as a patient suffering from abdominal aneurism, who Dr. Foss was wishful should be placed under treatment in the Newcastle-upon-Tyne Infirmary.

After careful examination, I concurred in the opinion expressed by Dr. Foss, and gave instructions for the patient to be admitted into the Newcastle-upon-Tyne Infirmary, under my care, which was done.

On October 30th, my colleague, Dr. Embleton, the senior physician to the Newcastle-upon-Tyne Infirmary, being at that time engaged in delivering the clinical medical lectures, selected this patient for examination and consideration by the class of students in medicine, as a case examplary of abdominal aneurism.

The patient stated that for four months he had been unable to follow his employment on account of pain in the back, more especially in the lumbar region, and at times round the lower part of the abdomen, and the inner surface of the thighs. He described the pain as "burning" and "plunging." In five weeks, he had been sensible of a beating in the abdomen, near the umbilicus.

On the abdomen being uncovered, it was noted that there was a prominence, which pulsated. The site of the pulsation was to the right of the umbilicus, and for about one inch above the umbilical line. The pulsating surface was smooth to the eye. When the hand was placed on the prominence, a tumour was distinctly felt, equal to an ordinary orange in size, which pulsated out of proportion with the moving mass. On the anterior prominence, the hand received a single systolic impulse, of considerable force. The hands placed on either side of the mass, received an impulse laterally as well as anteriorily, which impulse was distinctly expansile. The chief pulsation was to the right of the spine. The tumour was immovable, and was dull upon percussion. A slight thrill was perceptible, which was systolic. A second impulsive, or shaking action, diastolic in time, was also felt. Upon auscultation, a systolic murmur was heard. Upon applying pressure to the abdominal aorta, between the tumour and the ensiform cartilage, the pulsation in the tumour and in the femoral arteries was arrested. Upon being interrogated respecting syphilis, he admitted that five years ago he had suffered from gonorrhœa, and from a bubo, which had suppurated, but had not suffered subsequently from sore throat or any eruption.

In his occupation, he had been exposed to great heat, and had been accustomed to drink largely of ale, some days taking as much as ten pints; and at times, of spirit in addition.

He was fair in his complexion, and was of a spare build.

The case was regarded as one of aneurism of the abdominal aorta, situated just above the bifurcation, and in variety as lateral, sacculated, and enlarging to the right.

He was ordered to remain quiescent, in bed in the recumbent position, to take ten grains of iodide of potassium in one ounce of infusion of quassia, three times each day, and to have the ordinary meat diet.

November 8th.—He complained of having a troublesome cough. Upon careful examination of the chest, sonorous bronchi were heard on both sides, but nothing more abnormal. He was ordered to take the ordinary cough drops each night.

November 11th.—He stated that his cough was much relieved, but that the pain was still severe in the back and loins. Upon auscultation, no murmur was heard. Upon palpation, the pulsation was less forcible and the tumour was smaller. The iodide was increased to twenty grains.

November 18th.—The pain in the back has been less severe. The pulsation was more evident to the eye, and was more perceptible to the hand. It was elicited that patient, against the instructions given, had been leaving his bed each day. Quiescence was again strictly enjoined. The iodide was increased to thirty grains.

November 25th.—The pulsation was very slight. The iodide was increased to forty grains.

November 29th.—A pustular eruption has appeared on the forehead and chest.

December 2nd.—The pulsation has continued very slight. After consulting with Dr. Embleton, it was determined to employ arterial compression, on the cardiac side of the aneurism.

The patient being uninfluenced by chloroform or other anæsthetic, Lister's abdominal tourniquet was applied to the abdominal aorta, four inches above the umbilicus, by Mr. G. E. Williamson, Senior House Surgeon, who was aided by Mr. J. D. Dixon, Junior House Surgeon, Mr. G. B. Craig, Clinical Clerk, and Mr. A. M. Goyder, Clinical Clerk. I readily avail myself of this opportunity of acknowledging the kind and valuable assistance of these gentlemen, and of expressing my appreciation of their willingness to carry out my wishes.

The compressing pad was firmly screwed down, but the patient complained of such extreme pain, that the administration of an anæsthetic was necessitated. He was at once placed fully under the influence of chloroform, and the compressing pad was screwed down until pulsation was arrested in the aneurism and in both femoral arteries. The pressure was continued for half an hour, and after being removed, the pulsation in the aneurism immediately returned.

December 5th.—The patient was placed fully under the influence of chloroform, and the pressure was applied in the same manner as before noted, and was continued for about three quarters of an hour, and upon its removal, the pulsation returned as before.

December 8th.—When the patient was fully anæsthetised by chloroform, the pressure was applied in the same manner as on the the two preceding occasions, and while it was being continued, the radial pulses became so feeble, that it was deemed expedient to discontinue the administration of chloroform, and to maintain the anæsthesia by ether, under which the circulation revived. The pressure was maintained for one hour and a-half (from 8·30 p.m. to

10 p.m.), and upon its removal the pulsation in the aneurism returned as before.

At 1 a.m. on December 9th, the clinical clerk was hastily summoned, and found the patient restless, complaining of pain in the abdomen, which was general and not fixed to one spot, and passing bloody mucus from the bowels. A hypodermic injection of morphia ($\frac{1}{3}$ gr.) was administered, and the tincture of the perchloride of iron, in water, was given internally.

December 9th, 11 a.m.—The patient was still restless, passing bloody mucus from the bowels, vomiting and retching continuously, and complained of general pain in the abdomen. He had passed urine, which was of s.g. 1020, and contained no albumen. Upon very careful examination of the aneurismal tumour, the pulsation was considered more marked than what it had been previous to the application of the pressure. He was ordered to take milk with potash water, and to have a morphia suppository ($\frac{1}{3}$ gr.) administered in the evening.

December 10th.—Mr. Williamson, at his morning visit, observed that the aneurismal tumour felt harder, but was still pulsating; and at his evening visit, found that there was no pulsation in the tumour or in the femoral arteries. The patient still complained of pain and uneasiness in the abdomen, and was occasionally troubled with vomiting and voided bloody mucus per anum.

December 11th and 12th.—The patient's condition has remained unchanged, excepting that the temperature of the lower extremities has been perceptibly diminished, and has required the application of additional blankets and the hot water tin for the maintenance of the warmth.

December 13th.—The vomiting has ceased and the passage of bloody mucus has stopped. The radial pulse was 60, and steady. At the site of the former pulsation, in the abdomen, there was a hard tumour of about the size of a cricket ball. There was no pulsation visible or perceptible to the hand, and no murmur was heard. Upon careful palpation in the line of the abdominal aorta, on the cardiac side of the aneurism, no pulsation was discernible. At the ensiform cartilage the heart sounds were distinctly heard, but about one inch and a half below the ensiform cartilage no sound was heard, and no sound was recognised in the line of the abdominal aorta. The heart sounds were normal, both at the base and apex. There was no pulsation in either femoral arteries. There has been no suppression of urine, and the urine in character has been normal, of s. g. 1020, and has contained no albumen. There has been no complaint of headache, or of change of vision, or alteration of any of the special senses.

Perfect repose was enjoined, and he was ordered to take milk and potash water, and no medicine.

December 16th.—Patient has continued easy. The radial pulse was 72, and regular. The bowels have acted naturally, and the evacuation was free from blood. The tumour was decidedly smaller and was less hard.

December 20th.—In both groins some pulsation was noted, weak but distinct, and not in the situation of the femoral arteries. Upon deep pressure a cord can be felt on each side, regarded as the femoral arteries, but without any pulsation. In the posterior tibial arteries slight pulsation was perceptible.

December 23rd.—Sleeping and taking food well. The tumour was considerably diminished in size. The patient was permitted to be raised in bed upon the rest, and to take the ordinary meat diet.

December 27th.—The temperature of the lower extremities has increased, so that the hot water tin has been dispensed with.

December 30th.—At the site of the aneurism there was not anything to be seen, felt, or heard. The condition of the abdominal aorta remained as last noted, and there was no pulsation in the femoral arteries.

January 10th, 1877.—For the last fortnight patient has been walking about the ward. When interrogated, he stated that he was quite free from pain or other discomfort, and answered that he "felt as well as he had ever done in his life." He expressed himself as wishful to return to his home; but, when informed that it was important for him not to resume his previous occupation, he readily consented to remain.

At the monthly meeting of this society, held on Thursday, January 11th, the patient was introduced, the site of the aneurism was pointed out, also, the position where the compression had been applied, and it was demonstrated that there was no pulsation in the aneurism, in the abdominal aorta, or in the femoral arteries.

January 31st.—The patient was placed under the influence of ether, and a careful examination was instituted. At the site of the aneurism, no tumour was discernible. Some arterial pulsation was felt to the left of the umbilicus, which was regarded as the enlarged colica sinistra branch of the inferior mesenteric artery. In all respects the condition was satisfactory.

On February 1st the patient left the Infirmary, to return to his home.

As case No. 2, undoubtedly, was cured by the compression of the abdominal aorta, it will be desirable that reference should be made to the first recorded case of the cure of an aneurism of the abdominal aorta by pressure, which case occurred in the practice of Dr. William Murray, of Newcastle-upon-Tyne, in the year 1864. The interest and value of the case is enhanced by the importance of its verification on autopsy.

The following outline of the case is taken from Mr. Timothy Holmes' "Lectures on the Surgical Treatment of Aneurism," delivered before the Royal College of Surgeons of England, in the year 1872, and reported in the *Lancet*.

"The patient was a spare young man, aged twenty-six. The tumour was situated so high that the aorta was believed to be felt below it, pulsating naturally. It extended up to within three inches of the margins of the left ribs. Still there was room between the umbilicus and the ribs for the pad of the tourniquet, which was applied on the first occasion (April 16, 1864) for two hours, and on the second occasion (April 19, 1864) for five hours. On neither occasion was the circulation completely and permanently suspended, except for the last hour of the last and successful attempt. At the end of the second application of pressure, 'very slight pulsation was felt, and hopes were entertained that some advantage had been gained.' But, to the operator's surprise, the pulsation in the tumour altogether disappeared that evening, and the cure was complete and permanent. The man remained well, gaining his livelihood by a 'variety of labouring occupations,' till the year 1870, when, having resumed his original occupation of a paviour, he again presented symptoms of aneurism of a higher part of the abdominal aorta, and died on July 1, 1870, from rupture of this aneurism, which affected the vessel near the cœliac axis."

"The preparation which was removed from the body showed the first aneurism perfectly consolidated, and seated on the abdominal aorta, extending from close above its bifurcation to about an inch above the origin of the inferior mesenteric artery. The aorta was occluded above the aneurism, and its walls atrophied. The aneurism itself was also converted into a fibrous mass. The aorta was largely dilated up to the new aneurism, which had become 'diffuse' before death. As regards the collateral circulation, outside the abdomen, it was carried on between the internal mammary and the deep epigastric; between the hepatic artery and a branch of the epigastric; between the intercostals and the deep epigastric; between the intercostals and the superficial circumplex iliac." Within the abdomen, "the circulation was carried on between the colica media of the superior mesenteric artery and the colica sinistra branch of the inferior mesenteric, including its sigmoid and hæmorrhoidal branches; between the upper lumbar arteries and the ilio lumbar; and between the lower lumbar arteries and the circumflexa ilii." "The superior mesenteric artery was dilated to nearly the size of the aorta itself, and the trunk of the inferior mesenteric was so much dwindled that its trunk was hardly the size of its branches, in consequence of its supply of blood being cut off by the consolidation of the aneurism from which it springs."

REMARKS.

In contrasting the two cases that have been recounted with each other, and case No. 2 with Dr. Murray's case, it would appear that the establishment of the diagnosis of aneurism, the correctness of the situation fixed upon of the aneurismal tumour, the etiology, the anatomical or specific character of the aneurismal sac, the treatment that was employed, the changes consequent upon the treatment, and the deductions inferable from the treatment, are the points for critical disquisition.

First, as to the diagnosis. In both cases there was a tumour, which was immovable, which pulsated to the eye and to the hand, which was dull upon percussion, and upon auscultation of which a murmur was heard. Now, such physical signs, when in association, are evidence of aneurism, and of no other kind of tumour, let it be glandular, cancerous, hydatid or other, or of psoas or iliac abscess.

Respecting the situation of the aneurism. In both it was looked upon as of the abdominal aorta, near its bifurcation. The position and the immobility of the pulsating tumour, together with the neuralgic pains in the spine, pointed to the correctness of the supposition, while the fact that the cure of the aneurism in case No. 2 was accompanied by the disappearance of the pulse in the femoral arteries, rendered the possibility of the aneurism being situated in the inferior mesenteric artery, or in one of its branches, as highly improbable.

Concerning the etiology. Both patients were under thirty years of age. The history of previous syphilis in the second was clear. The supposition, therefore, that in both the lesion of the arterial coats was inflammatory in nature, and not atheromatous, was rendered very certain. If it be true that in this lesion an inflammatory process commences just external to the lining membrane, leading to a deposition of lymph there, producing elevation of the internal surface, and, as a consequence of the pressure and of the interruption to the nutrient supply, atrophy and erosion of the end-arterial membrane, it may readily be understood how easily the already thinned arterial wall will dilate and become in time converted into a lateral, sacculated aneurism.

As to the anatomical or specific character of the aneurism. In both it was believed that the aneurism was of the lateral, sacculated variety. In the first case, the sac was enlarging to the left, in the second to the right. Whilst coagulation of the blood within the aneurism is scarcely obtainable in the peripheric, dilating aneurism, in the lateral sacculated variety, there is a natural tendency to such coagulation, and coagulation does actually promote anatomical cure. Hence it would seem that the clinical distinction of these two great varieties of aneurism is not mere scholastic

refinement, but of practical importance. For this reason, therefore, is the value of estimating the physical condition of the aneurism, for upon such determination is the treatment to be decided upon.

In the treatment, whether constitutional or mechanical, the principle was recognised that it is necessary for the circulation to be enfeebled or impeded, in order that the aneurismal sac may become filled with the constituents of the blood, and in process of time rendered impervious. The term constitutional treatment being regarded to include the dietetic, medicinal and postural requirements. In the first case, the result was gained by constitutional treatment alone ; in the second, by mechanical treatment, after the constitutional treatment had been unprofitable. The effect, then, of the administration of the iodide of potassium, in association with the rest and the regulated diet, in the first may be conjectured to have been the gradual filling with the constituents of the blood, and the subsequent shrinking of the aneurismal sac, but without the obliteration of the aorta, on the cardiac side of the aneurism, the circulation in the arteries on the distal side of the aneurism continuing uninterrupted. In the mechanical treatment, that by the application of pressure, more than this is effected ; for it may be justly assumed that the current of the blood along the aorta, and thence into the aneurism, is either wholly or in a great measure arrested. This temporary condition of the aorta and of the aneurism being the same, or nearly similar to that which arises when a ligature is applied to a large artery on the cardiac side of an aneurism, namely, upon the drawing tight of the ligature, there would be a cessation of the pulsation and of the murmur in the aneurismal tumour, which would at the same time subside, becoming partially emptied of blood. Though the direct flow of blood is arrested by the ligature, after a varying interval of time blood will enter the aneurismal sac by the inter-osculating circulation, and it is from this blood that the sac becomes filled, it is supposed, by fibrin deposited in stratified layers, as in spontaneous cure of the disease. So far, therefore, the mechanical treatment of aneurism by arterial compression, and that of the application of a ligature on the cardiac side of the aneurism, may be compared and may be regarded as analogous ; but when the compression is removed, and the blood again circulates, the condition is very different : in that where the compression has been employed the blood circulates directly, passing to the aneurismal sac in its usual channel ; but in that where a ligature has been applied, the blood comes indirectly to the aneurismal sac, passing in a circuitous route. The question presents itself, is this difference such as to determine the deposit of the constituents of the blood, either in laminated fibrin or in

coagulum? The interval of time that elapsed between the compression and the consolidation would be in favour of laminated fibrin being first deposited, and subsequently that a coagulum was superadded, filling the aneurismal sac, and blocking the aorta. This is the explanation offered: the difference of time in case No. 2, in Dr. Murray's case, and in others, for the process to be accomplished, possibly, being dependent upon constitutional differences, more especially upon a difference in the quality and plasticity of the blood.

If it be admitted that the supposition is the correct one, that the filling up of the aneurismal sac is by stratified fibrin, and finally by coagulation of blood, it is unnecessary, therefore, to apply pressure to wholly interrupt the circulation, but rather that the circulation should be impeded, that moderate compression is only necessary to lower the force of the circulation, that the mechanical treatment should be in accord with the constitutional treatment.

The channels through which the blood was carried after the cessation of the circulation in the abdominal aorta, in case No. 2, for the present is visionary; but from the similarity of the position of the aneurism to the position of the aneurism in Dr. Murray's case, which was disclosed on autopsy, and which it was deemed expedient to give when the case was referred to, it may be presumed that the circulation was similarly carried on.

The bloody mucus that was passed per anum was regarded as the result of the congestion of the intestinal vessels following upon the pressure, not the consequence of rupture produced by the compressing pad; for if such had been the condition, the blood, either liquid or in the condition of coagulum would have been voided.

The conclusion deducible from this consideration is, that aneurismal tumours of the lower portion of the abdominal aorta may be successfully treated by arterial compression on the cardiac side of the aneurism, but that this method is a dangerous one, and should not be employed until the constitutional treatment has failed; and that if arterial compression is employed, it should be moderate and prolonged, rather than complete and of short duration.

Dr. Gammage said: I have been much interested in the question of the treatment of aneurism by compression. The second case which was successfully treated by the rapid method was a patient of my own. Dr. Heath in that case applied pressure for ten hours; I administered chloroform for seven or eight hours. The cure was perfect. The patient had had syphilis; he was 50 years of age; but though the operation was performed several years ago, he is still alive, in good health, and able to work at his usual employment.

Dr. Davis referred to a case of cancer of the stomach in which the tumour pulsated. Two practitioners, who saw the case, were confident it was one of aneurism. *Post mortem* examination showed it to be a cancer.

Dr. Embleton said he had at the present time two cases under treatment. He was trying constitutional treatment, and hoped at some future period to bring these cases before the Society.

Dr. Byrom Bramwell said: I will not at this late hour detain the Society with any long remarks on the most interesting cases which Dr. Philipson has brought before us. There are, however, one or two points which I would like to mention. Dr. Philipson has fallen into a slight error with regard to the first one. He states in his paper that I examined that patient and confirmed the diagnosis. I was present at the examination referred to by Dr. Philipson, not as an examiner, but as Secretary of the College of Medicine; but I did not examine the patient, and am, therefore, unable to say anything about the case.

The second case is one of great interest. Dr. Philipson very kindly afforded me the opportunity of examining the patient while under ether, and it is only right that I should now, as I did upon that occasion, express myself as differing from Dr. Philipson with regard to the condition of the circulation at that time. I examined the patient very carefully, and distinctly felt pulsation from the ensiform cartilage to the umbilicus. On auscultation over this pulsation a distinct arterial sound, as Dr. Philipson expressed it, was heard. There was no tumour then to be felt in the position of the former aneurism. Pulsation could be distinctly felt in both posterior tibials, and in my opinion pulsation could be felt, though faintly, in both femorals. There was no visible nor perceptible pulsation in the epigastrics. For these reasons, I told Dr. Philipson that, in my opinion, the circulation was still being carried on in the usual course, viz., through the abdominal aorta. The matter is not of much moment; but as I differed from Dr. Philipson on that occasion, and as Dr. Philipson has not mentioned the fact in his paper, I mention it now.

Another point to which I should like to draw attention in connection with the second case is the fact that a mass of coagulated fibrin, the size of a cricket ball, and situated within an aneurismal sac, was absorbed in the space of three weeks. This is a fact which I think Dr. Philipson should have commented upon in his paper, for it is one of considerable interest.

Dr. Philipson thanked Dr. Embleton for his kind remarks, and his aid in counsel and his advice with regard to treatment. He had been much interested in the remarks of Dr. Gammage. In reply to Dr. Davis, he stated that the abdominal aneurism could

be distinguished from a cancer of the stomach by its immobility. He was sorry to differ from Dr. Bramwell, but in his opinion the abdominal pulsation was in the enlarged colica sinistra. He did not think the pulsation in the groin was in the femoral, but in the circumflex ilii. He was sorry Mr. Russell and Dr. Williamson were not present, for they could have spoken to the presence of a solid tumour.

Dr. Byrom Bramwell said he was afraid Dr. Philipson had misunderstood him. He never intended to question that there was a solid tumour, but simply wished to draw attention to a fact which, so far as his experience went, was unique, viz., that a large solid mass of fibrin situated in the interior of an aneurismal sac had been completely absorbed in such a brief period of time.

The President said he had so understood Dr. Bramwell.

NORTHUMBERLAND AND DURHAM

MEDICAL SOCIETY.

The sixth monthly meeting was held in the Library of the Newcastle-on-Tyne Infirmary on Thursday March 8th. The President (Mr. G. B. Morgan) in the chair.

The following gentleman were proposed for election as members:

W. B. Kilburn, M.R.C.S., Eng., West Auckland.
James Richard Lownds, M.R.C.S., Eng., Newcastle.

PREVALENT DISEASES OF THE DISTRICT.

Mr. Henry E. Armstrong presented the following :—

Return of Admissions to, and Deaths at, the Newcastle Fever Hospital, during the month of February, 1877.

	ADMITTED.	DEAD.
Typhus	2	1
Enteric Fever	1	—
Cerebral Disease	1	1
Total	4	2

Dr. Arnison said he had been attending a family at Sheriff Hill, in which three children had been attacked, and were recovering from enteric fever, and the mother was, at the date of the meeting, at the point of death. In investigating the cause, he found that the drainage was perfect, and altogether out of the house. The water and milk supply were good, and of many families supplied from the same sources, none were affected with fever. He had been quite at a loss to account for it, until it was discovered that a boy, who was employed to bring the water from a public well in the village of Windy Nook, about a quarter of a mile distant, had repeatedly, to save himself trouble, taken it from an open runner which drained the fields on the high side of the road. Those fields lie on the grindstone rock found in that neighbourhood, the soil in many places being scarcely more than a foot in depth, and had been covered with manure composed partly of night-soil, which had been washed into the drains by the recent rains. In addition to this a privy was found almost over the drain as it flowed out by the road side, in such a position that the drainage from it would percolate into the drain and add to the mischief.

Dr. Ellis mentioned the particulars of a case of small-pox which had occurred in his practice. The patient was unvaccinated. She came from Manchester, and took ill almost immediately afterwards. There had been some cases in the school which she attended. She died on the twelfth day. In reply to questions, Dr. Ellis said every precaution had been taken to prevent the spread of the disease. One of the persons in the house had refused to be vaccinated, saying "She would take her chance."

PATHOLOGICAL TRAY.

The President showed the parts from a case of unsuccessful tracheotomy, and said: The examination which enabled me to obtain this specimen was on the 28th of January, consequently too late to have shown it at our last meeting. This I regret, as the appearances have a good deal changed from a month's immersion in a chloral solution. It is the trachea and larynx of a patient who died of pleuro-pneumonia on the 26th of January, under the care of my friend, Mr. Wilson, of Sunderland; and to him, and to his assistant, Dr. Briese, I am indebted for some notes of the case, for the opportunity of operating, and for permission to show the preparation to this Society. The patient was 33 years of age, a brass-finisher, and was first seen by Mr. Wilson two days before his death. He was then suffering from dyspnœa, cough, and pain in the chest on both sides, and also in throat. The voice was a whisper; the breathing had a whistling character; the face was pale, and lips livid. According to his own statement, his voice had been hoarse for six weeks, and he had cough, without expectoration, but he had continued at his work. Exertion, however, made his breathing so difficult that he gave up his work, and went to bed. He had been of intemperate habits, but said he had not had syphilis. His home was miserable in the extreme, although his work had always been constant, and his wages good. Counter irritation to throat and chest, warmth, inhalation of steam, and careful feeding failed to relieve him, and at 2 a.m. on the morning of the 25th, when I first saw him, his symptoms had all become so urgent, and all pointed to œdema glottidis, that it was decided to open the trachea. The operation presented no difficulty—hæmorrhage at once ceasing when the tube was introduced; and the relief was immediate. The chest mischief, however, was unrelieved, and he died twenty hours after operation. The *post-mortem* examination showed extensive adhesion of both pleura, both recent and old, and both lungs intensely congested and in parts hepatized, and markedly by the ribs. The rima glottidis was quite closed by œdema of the colour of bright vermilion, and beneath superior thyro-arytenoid

ligaments was a line of superficial ulceration and slightly raised vegetations of recent lymph. The specimen is a good example of cynanche laryngea, and, under more favourable circumstances, would probably have ended in recovery. The ulceration and lymph deposit upon the chordæ vocales has probably been of old standing, and may have been syphilitic, or possibly caused by breathing the fumes of muriatic acid gas in his calling.

Mr. Henry E. Armstrong showed a portion of dura-mater from the case described in the monthly return of admissions to the Fever Hospital, as one of cerebral disease. In the anterior portion of the falx cerebri was deposited a bony plate, about an inch long and half-an-inch wide. The plate hung down between the anterior lobes. Near the middle or vertical part of the falx was another bony deposit of the size of a split bean, flattened on the right side, rough and convex on the left. The patient in whose dura-mater they were found had been sent to hospital as a case of typhus, to which disease his symptoms bore some resemblance. On the evening of his admission, among other signs, there were observed several dark spots not unlike petechiæ. These spots, on examination next morning, were found to be flea-bites. The nature of the disease soon became apparent, and the diagnosis of general cerebritis was confirmed by *post-mortem* examination. One of the symptoms was left ptosis. There were also violent delirium, dilitation of the pupils, twisting of the neck, and waving of the arms. There was neither convulsion nor coma, and death was somewhat sudden. At the *post-mortem* examination there was found to be general vascularity on the surface and in the substance of the brain, with a considerable amount of effusion. The vascularity was not marked in the neighbourhood of the deposits, neither was there anything to show what relation these bore to the disease from which the patient died. The corpus striatum and adjacent parts of the brain on the left side were softened. Bony deposits are said to be met with not unfrequently in the brains of the aged and insane. The patient from whom the exhibited specimen was derived was 28 years of age, and was, so far as could be gathered, of sound mind.

The President remarked that patients suffering from other diseases are occasionally sent into every Fever Hospital.

Dr. Heath showed the results of his lithotomy since January, 1875, and said: In the beginning of the year 1875 I had the pleasure, sir, of showing to the Society 13 stones, the result of about 18 months' work in lithotomy, the patients from whom the stones were removed having all recovered. This evening I propose to show the results of 12 lithotomies performed since the afore-mentioned period. Two of these were median operations, 10 lateral. Six of the operations were performed in the Infirmary, and six in private

practice. By one of the median operations a bougie, incrusted with calcareous matter, was removed, the finger being passed into the bladder through the wound, and the foreign body hooked by it, and so withdrawn. The particulars of this interesting case have already been related to the Society.

It will not be necessary to give any details of the majority of the other cases. Nos. 10 and 11 have been already shown, and the remarkable points in the cases related. The whole of the cases are arranged in a tabular form for convenience, and the principal points regarding the stone and the case stated, each having a number attached.

No. 5 is an example of rapid healing; the patient would have dined down stairs in the dining-room on the 13th day had not swelling of the testicle taken place. The stone is small, but the patient refused lithotrity. There was no disturbance of the general health after the operation, except what was due to the testitis.

No. 6, 70 years of age, had for several years suffered from bladder symptoms, attributed by those whom he consulted to prostatic disease alone. On sounding, the instrument seemed to pass into a small heap of stones. Afterwards he began to void portions of the outer shells of small stones, and got rid in this way of a great quantity, with relief to his symptoms. Subsequently, when the expulsion of the calculi ceased for a time, the introduction of a full-sized catheter would again determine the passage of fragments. These were always of the same character, and looked like portions of the outer shell of small calculi. Distinct nuclei were rarely seen. At length relief ceased to be obtained in this way; he suffered from attacks of cystitis, purulent urine, and inflammation of the prostate; his health generally began to suffer, and I prevailed upon him to have the stones removed. Previous to the operation he was kept in bed and subjected to a course of treatment, to remove the bladder disease and quiet the prostatic affection.

The median operation was chosen, in consequence of the small size of the stones, which were readily taken out from the bag behind the prostate without dilatation of the neck of the bladder. There was a good recovery from the operation. The patient left home for change of air in about six weeks afterwards, and returned much improved in health. From exposure to cold and wet, in October he was attacked with acute renal symptoms, accompanied by suppression of urine, and he died comatose on November 2.

The formation of the calculi was no doubt a secondary thing in this case, the result of the enlarged prostate, and took place in the post-prostatic bag, where residual urine constantly accumulated. It is interesting to note that after the operation, at times, when suffering from temporary aggravation of prostatic symptoms, he obtained relief from the re-opening of the wound, and a passage

through it of urine, by which the bladder was more effectually emptied.

No. 7 was also a man advanced in life, upwards of 70, who weighed 18 stones, and whose prostate was greatly enlarged. When I was first consulted as to his case, he was suffering excessively, having constant desire to pass water, the act being accompanied with excessive pain. There was great constitutional irritation; urine loaded with pus, containing tube casts, and albumen; dry tongue and fever. His condition was, indeed, looked upon as hopeless by his friends, and it was only after he had been kept in bed and put through a course of treatment carefully carried out by Dr. Jackson, of Darlington, his surgeon, and F. Streeton, Dr. Jackson's assistant, that he improved sufficiently to admit of my advising an operation. The lateral operation was done, and the bladder opened without difficulty, but the removal of the stone was a troublesome business —its large size, the great bulk of the prostate, and the depth of the perineum, all put impediments in the way of the extraction. It was necessary more than once to alter the position of the stone, and also to enlarge the incision pretty freely with a probe-pointed straight bistoury.

The recovery was exceedingly good; from the second day after the operation there was normal temp. and P., and he might be said to be out of danger from the operation within three weeks, but at a later period he suffered considerably from difficulties connected with the bowels, and had an alarming rise in temperature ; but, thanks to the care and skilful attendance of Dr. Jackson and Streeton, he got over this danger, and ultimately got quite well, and continues so at present.

No. 12 is the only other case requiring special mention. This gentleman was 62 years of age, and had for about three years suffered from prostatic disease, accompanied by obstruction to the flow of urine, chronic retention, accumulation of residual urine and constant desire to pass water. For some time previous to the operation, complete retention had taken place, accompanied, in spite of the regular use of the catheter and washing out of bladder, by purulent alkaline urine and constitutional disturbance. The catheter employed had a somewhat round curve which passed easily over the raised prostate, and for that reason was not calculated to readily detect a stone; nevertheless, upon one occasion whilst engaged in washing out the bladder, Dr. H. Ward, his surgeon, felt the instrument strike against a calculus. In consultation with Dr. Ward and Dr. H. Ward, it was determined to remove the stone by lateral lithotomy; this was done without difficulty in spite of the great size of the prostate, the lateral lobes of which encroached upon the urethra, greatly deepening the passage and narrowing it. The patient did extremely well, but a curious thing took place when the tube was

Name.	Age.	Date.	Weight.	Shape.	Size.	Composition.	Result.	Remarks.
	Years.		Grains.					
1.—C. ..	14	June 3, 1875 (lateral)	369	Cylindrical	4 in. and $3\frac{1}{4}$ in.	Oxalates and Phosphates	Recovery, June 13th, 10 days Wound superficial	Urine passed by urethra on fifth day
2.—B...	5	Oct. 20, 1875 (lateral)	220	Cylindrical	3 in. and $2\frac{1}{4}$ in.	Uric Acid	Recovery, Nov. 10th, 21 days Wound superficial	Urine passed, chiefly by urethra, 8th day. Wound opened after his return home, whilst straining to pass urine. A fistula was thus formed, which, however, soon closed again
3.—R...	46	July 6, 1875 (median)	—	Bougie	12 in. long	Phosphatic deposits	Recovery, Aug. 8th. Still small fistulous opening remaining when he left the Infirmary	Shown soon after removal, and case related
4.—S. ..	5	July 13, 1875 (lateral)	300	Cylindrical	4 in. and $2\frac{3}{4}$ in.	Urates, with phosphatic deposits	Recovery, July 31st, 18 days	Urine passed, chiefly by urethra, on the 11th day. 14 days after operation, wound being nearly closed, about two ounces of blood came suddenly from the wound, whose healing was thus delayed somewhat
5.—C. ..	56	Feb. 5, 1876 (lateral)	63	Circular	$2\frac{1}{2}$ in. and 2 in.	Phosphatic	Recovery, Feb. 18th, 13 days. Wound superficial, good recovery from operation	On 8th day urine passed, chiefly by urethra ; 12th, all the urine by urethra. Swelled testicle
6.—B...	—	May 25, 1876 (median)	115	15 stones	—	Phosphatic	Recovery, June 5th, 11th day. Left home July 10th	Died, Nov. 4, of renal disease. Urine began to pass by urethra, June 5. Healing of wound delayed by urine passing through
7.—T...	70	July 15, 1876 (lateral)	1041	Oblong	$5\frac{1}{2}$ in. and $4\frac{1}{2}$ in.	Urates	Recovery, July 30th. Out of danger 15th day.	From the second day after operation, normal temperature and pulse ; much trouble at a later period in connection with bowels
8.—A...	32	March 14, 1876 (lateral)	103	Circular	3 in. and $2\frac{1}{4}$ in.	Uric Acid	Recovery. Wound superficial on March 29th (15th day). Left Infirmary, 13th April.	On the fifth day urine passed through urethra
9.—D...	25	Oct. 3, 1876 (lateral)	712	Circular (mulberry)	5 in. and 4 in.	Oxalate of Lime	Recovery. Wound superficial on Oct. 16th (13th day)	On the ninth day urine passed through urethra
10.—B...	6	Dec. 12, 1876	180	Cylindrical	$3\frac{3}{4}$ in. and $2\frac{5}{8}$ in.	Phosphates and Urates	Recovery. Wound superficial on 24th Dec. (12th day)	Urine passed by urethra, eighth day. Recurrent stone
11.—B...	9	Dec. 5, 1876	217	Pyramidal, with neck	4 in. and $3\frac{1}{8}$ in.	Phosphatic	Recovery, Dec. 18th, 13th day. Wound quite superficial	Eighth day, urine passed by urethra
12.—S...	62	Feb. 6, 1877	150	Triangular	$1\frac{1}{8}$ in., $1\frac{3}{8}$ in. and $1\frac{5}{8}$ in.	Urates	Recovery, Feb. 13th. Out of danger	On March 5th, wound so contracted that tube could hardly be passed

removed. No urine whatever passed by the wound, which seemed as completely closed as the neck of the bladder itself. Thus the patient, although he had been subjected to lithotomy, was in the position of having no outlet to the bladder. It became, therefore, necessary to re-introduce the tube and retain it, and its retention will continue necessary until the patient is sufficiently well to resume his habit of drawing off his urine. The condition of the bladder and urine improved greatly after the operation.

Dr. Embleton asked if Dr. Heath had made any observations with regard to the shape of the bladder at different periods of life. He would suggest that the state of the bladder varied with the age of the patient, and that this was the cause of the moulding of the stone in the way described.

Mr. Broadbent showed a tumour of the bladder, and said: The patient from whom I removed this specimen was a pit-boy, æt. 13. He was a strong healthy lad. He first complained of some difficulty in making water about the middle of January last. The symptoms were, however, slight. About March 1st, he began to pass blood in his water. I was called to see him on March 4th, and found him complaining of great pain in the region of the bladder, and inability to make water. The bladder was considerably distended. Several catheters were introduced, but no urine was withdrawn. The bladder was then punctured above the pubes; a large quantity of bloody urine and coagulated blood escaped through the trocar. He complained of great pain in the region of the rectum, and would on no account allow the parts to be examined. The next day, March 5th, he was in the same condition. Catheters were again introduced, and failed to relieve; the bladder was again punctured above the pubes. On March 6th and 7th, he passed a small quantity of blood per urethram. On March 8th, the bladder was again punctured. Eight hours after this last operation he expressed a wish to make water, got out of bed, and immediately fell back dead. The *post-mortem* showed extensive peritonitis. The walls of the bladder were greatly thickened. In its interior was found this large tumour. Dr. Bramwell has kindly examined it, and says it is lympho-sarcoma. The pelvic and abdominal glands did not seem enlarged. The friends would not allow the other parts of the body to be examined.

Dr. Byrom Bramwell showed a tumour of the brain, and said: The patient, Sir, from whom this specimen was taken, was admitted under my care at the beginning of the present year, complaining of headache, giddiness, and vomiting. She was a well-developed healthy-looking girl, æt. 21. Until the age of 18 she had been strong and well. At that time she began to suffer from pain in the head. Eight months before admission the

headaches became more frequent and severe. Two months before admission she was obliged to give up her work as a shop girl. On admission the only complaints were headache, occasional giddiness, and vomiting. The temperature was normal. The body was quite healthy. There was no paralysis; sight was good. She had never had fits. On examining the eyes with the ophthalmoscope, double optic neuritis was found in both discs. The nature of the case was now evident, for the combination of symptoms, headache, vomiting, and double optic neuritis, in the absence of fever, urinary disease, lead intoxication, point conclusively to the presence of an intra-cranial tumour. So far the case was clear, but a much more interesting and difficult matter was the situation of the tumour, for in case of intra-cranial tumour the diagnosis should include not only the presence of a tumour, but also its locality. In this particular case there were no localising symptoms. The treatment consisted in the administration of half drachm doses of iodide of potassium three times daily, and the relief of the pain by means of croton-chloral. Considerable improvement took place, and the girl thought herself well, when suddenly, one night, she took an epileptic fit and died. The *post-mortem* showed a large glio-sarcomatous tumour of the right hemisphere; the tumour had destroyed an extensive tract of grey matter about the lower end of the fissure of Rolando. Dr. Bramwell pointed out the extreme value of the ophthalmoscope in these cases, and laid stress on the fact, first discovered by Hughlings Jackson, that double optic neuritis is often present with perfect vision. Dr. Bramwell also said he had only described the leading features of the case. It would have occupied too much time to go fully into all points of interest connected with it. He hoped, however, to publish it, together with his other cases of intra-cranial tumour.

ON THE IMPORTANCE OF LEGISLATION FOR HABITUAL DRUNKARDS,

WITH CASES IN ILLUSTRATION.

By J. W. EASTWOOD, M.D., Edinburgh, M.R.C.P., London.

DINSDALE PARK, DARLINGTON.

Dr. Eastwood said that at the close of the last meeting he had given notice that he wished to make a personal explanation, and to reply to some remarks which had been made by Mr. H. E. Armstrong in reference to a petition which he (Dr. E.) was now prepared to lay before the members. These remarks appeared to be out of order, as the petition mentioned was not before the meeting, but was signed by members, in their individual capacity, as medical men. It was quite useless for the president to sign any petition on behalf of the Society, as such petition was only considered as being from one individual, so that every person signing it did so on his own individual authority. It was well for this fact to be known.

It is too late in the day now, before a society of medical men, to say anything to prove the necessity for action on this subject. Some years ago, when I first took it up, as one of the pioneers in a legislative movement for the amelioration of the habitual drink-craver, I found the members of our profession unwilling to commit themselves. They were not prepared to say what ought to be done, or if it were even necessary to do anything, to restrain a rather considerable section of our population from ruining themselves and their families. When they thought and read more about the matter, and especially when cases came before them of persons for whom they could do literally nothing, in a medical sense, they became aware that the complaint called dipsomania was a veritable disease. This change in medical opinion has come about, to some extent, in consequence of what I conceive to be the different drinking habits of the present day, as compared with the past, within at least my own remembrance. Formerly, a man got drunk—a woman rarely—time after time, and no very serious ill effects followed, unless he met with an accident. The drunken bout ended sometimes in an attack of *delirium tremens*, and then a period of sobriety followed. At the present time, men and women of all classes of society drink more habitually, not at the dinner table merely, when it was customary for every gentleman to become positively drunk, but they drink in the morning, they drink at lunch, they drink in the afternoon, necessarily at dinner, and they end with a night-cap of brandy or whiskey. These habits produce a state of alcoholism, or

saturation of the blood with alcohol, rather than a decided attack of *delirium tremens*, and the result is a general unfitness for business, an alteration of disposition, impairment of memory, and other symptoms, not unfrequently ending in some form of paralysis. Sad results are produced in family circles in the middle and upper classes of society, whilst in the lower classes the cases are often summarily dealt with by the police and the magistrates.

Whilst, therefore, medical men are fully satisfied that there should be some legislative interference, and some attempt made to find a remedy for a real disease, this is not yet the case with the public generally. They do not acknowledge drink-craving in any form to be either a disease or a crime, but they think that every man in this matter ought to do that which is right in his own eyes. It is with this object in view more particularly that I wish to bring this subject forward. I am anxious to let you know what is being done, and to ask for your further countenance and assistance. During last year I tested the opinions of the medical profession in the North of England, by bringing the subject before the North of England and Yorkshire branches of the British Medical Association the Sheffield Medico-Chirurgical Society, the South Durham and Cleveland Medical Society, and the members of this large and prosperous society. There was, in no instance, any expression of decided dissent, and petitions were signed by all the presidents and many of the members in favour of legislative interference. I have now to tell you that in consequence of the Home Secretary not being able to do anything with this question in the House of Commons last session, but promising to consider any bill which might be prepared, none of the petitions were presented. After the subject was so fully discussed at the large meeting of the British Medical Association at Edinburgh in August, 1875, a sub-committee was formed, of which I am a member, to do the best they could to carry out the resolution of the Edinburgh meeting. Afterwards the members of the Social Science Association were induced to take up the subject as a social and legal one, and our committee has been acting jointly with one of that association. From this has originated a special "Society for Promoting Legislation for the Control and Cure of Habitual Drunkards." The president is the Earl of Shaftesbury, and a number of noblemen, bishops, members of Parliament, and others, are supporting the movement. We have now got so far as to have provided a draft bill divided into a civil and a criminal portion, and this we hope to bring before the House of Commons, when we shall be glad if every medical man will use his personal interest with members of the House for promoting this bill. It is for these reasons that I come before you to ask for the signature of the president and members of the Northumberland and Durham Medical Society to a petition which is only verbally different from that adopted last year.

With these remarks of an introductory nature, I shall now bring before you some cases which go far to show the necessity of legal provision being made for the treatment of this unfortunate class of patients. Personally, I can assure you, they are to me a very troublesome people, for my advice is sought, and I can often give them none of a satisfactory nature, as I am generally powerless to treat them efficiently. In a few instances only can I receive them as certified patients, but after a short residence, by proper treatment and regular habits, they are so soon nearly recovered, or apparently so, that I cannot legally detain them, and my trouble has been of little use. To expect to cure a man in a month or so, whose complaint has perhaps existed for years, is, generally speaking, not reasonable, though I have had a few such satisfactory cases. I shall now give you a few instances of intemperance, or decided drink-craving, and I shall, as far as possible, use the words of the patient, his friends, or medical attendant, and in such a manner that there will be no breach of confidence in doing so. The number of letters I receive is very considerable, and the answers often unsatisfactory, so that I have no hesitation in saying that I could have had, in a separate house, a considerable number of resident patients.

Case 1. A professional gentleman, aged 38, came under my care some years ago, whom I received reluctantly, but whose friends wished to benefit him, if possible. For some time he had been drinking, and unable to attend to his duties. When he entered my house he did so under protest, but I informed him that every legal requirement had been complied with. He admitted that he had been drinking, but he was not at all intoxicated. His eyes were injected, and his manner excited; he could not sit still for many minutes together, and he launched forth on the subject of his delusions. He was incoherent, and harped continually upon his wife's unfaithfulness, saying the most disgusting things of her and of other persons, which it was impossible could be true. At intervals he cried like a child. Under the restraint from drink, and with appropriate treatment, regular exercise and diet, the delusions disappeared in a fortnight, and in a month from the time of admission he went home, quite strengthened in body and mind. Fortunately, he has continued well, though I considered the time too short for a satisfactory recovery. This is one of the most favourable cases I have attended.

Case 2. This patient is also a professional man, aged 36, and I went first to see him at his own home. His mind was enfeebled, the memory imperfect, and the mental and physical system of an active and powerful man was so prostrated, that he was quite unfit for business. His walking was irregular, his steps feeble, and he had many of the early symptoms of general paralysis of the insane. The skin was pale and flabby, the pulse feeble and small, and the

digestive organs much disordered. He had been literally soaking himself with alcohol, chiefly brandy. My visit frightened him to some extent, and I prescribed for him, so that he recovered in a short time. A year afterwards, however, he had another attack, and he was so violent towards his wife and others, especially when drink was refused to him, that it became really necessary to place him under my care, with certificates. By cutting off the alcohol, giving him chloral at night, and quinine and strychnia during the day, he was so much improved in a month, that he went home, but he ought to have remained at least three months. The legal difficulty of keeping him any longer stood in the way, and he returned home, relapsing again soon afterwards. He has continued to have successive attacks, including one of *delirium tremens*, and the probable end of his career, which has been a most honourable one, will be death from general paralysis of the insane.

Case 3. I shall give this case in the words of one of the most distinguished of our provincial surgeons, a teacher of surgery, who consulted me by letter :—

"Can you help me with your advice, or in any other direct way, in this case? A lady is left a widow, with nine children, all well provided for, but, unfortunately, the second son, aged twenty years, has lately shown unmistakeable signs of habits of intemperance, which has distressed his friends greatly. How far the habit has been going on secretly for some time I cannot tell, but I fear it is of longer standing than the poor mother will admit of. The idea now is, that some effectual steps should be taken to break him off the habit while he is yet a minor, for I believe when of age, only nine months hence, he will have control over money and property, which will enable him still further to go wrong. Now, could you undertake such a case yourself? Could you take him in any way as a private boarder, not exactly as a patient, but in your own private apartments; and could you, or do you think you could arrange to get him some sort of employment or daily work, which would take off the tedium of being away from home, and above all things, away from temptation? Or, if you could not do this yourself, can you recommend me any place where he could be placed?"

I gave the best advice I could respecting this young gentleman, and as I could not legally receive him into my house without certificates, I could not undertake the charge of him. I could advise his being sent to some one who would take charge of him during his minority, whereas he ought to have been placed in an establishment for inebriates, and legally detained there.

Case 4. This was also a young gentleman, about whom I was consulted three years ago by his father. He was intending to bring the patient from the West Riding of Yorkshire to place him under my care, but when the medical men saw him they were unable

to certify to his unsoundness of mind. He had been excited, had been drinking, and appeared to be a young man of a low type of organisation. The father's letter says: "I may say that my own impression is that his present excitement and foolish acts have come on from secret drinking during a very short time, and of which we had not the most remote idea. The case is really, I fear, one of moral depravity."

The only advice I could give was similar to that in the previous case, and I never heard the result.

Case 5. This was a lady, about whom I was consulted, and I will give the account of her in the words of her own medical attendant:—

"I know a lady, aged 35, who has been a governess for some years, and who is well educated for the purpose. She has, unfortunately, given way to intemperance for the last ten years, at intervals, and is constantly losing her situation. She was once placed under the care of a surgeon, and lived in his family as a governess. For a year she conducted herself properly, no alcohol being at hand, but as soon as temptation is in the way she is overcome. She is, in fact, quite a dipsomaniac, and cannot resist drink, if she can obtain it. What do you think would be the best to be done with her? If we cannot get her into an inebriate asylum, I am inclined to think the next best plan would be as a governess in the family of a teetotal medical man."

I sent a list of houses where inebriate patients are taken, and recommended that an attempt be made to obtain some occupation in one of them.

Case 6. The last case which I shall bring before you is more remarkable than any I have yet had to deal with. I was written to early in 1876 by a gentleman in Scotland, about his brother, who had been a settled dipsomaniac for four years, and whom he was anxious should be placed under my care. I replied in the usual way, which has now become almost stereotyped, that I could not receive anyone, voluntarily or involuntarily, without two medical certificates, and stating generally the law in such cases. For some weeks I heard nothing more of the patient, and I concluded that he would not come. However, in April, I heard again from South Wales, where the gentleman lived, and his brother wrote me that the patient did not appear so much disposed to place himself under my care as he had been. He says: "He professes a desire to conquer his foe, but he persists in drinking, and to a great extent "on the sly." By cutting off his supplies of money, we can put such pressure upon him as we believe to be sufficient to compel him to do what we wish. We can get certificates from Dr. H., of C——, and Dr. Lionel Beale, both of whom know him well. Dr. H. looks upon him as incurable; I do not. He abstained entirely

for a week while we were in Scotland, and lately on several days besides, though on many days he managed to elude my vigilance and get brandy, beer, &c., to an undue extent. We know nothing as to the legal questions involved, but we presume there is no difficulty if he agrees to go and we get the certificates."

Next came a letter from the patient himself, from North Wales, in which he regrets his mistake that Dinsdale Park was not an establishment for dipsomaniacs. It was proposed that I should receive the patient, his wife, and his brother, and I suggested taking lodgings in the neighbourhood. He says, "I think my best plan will be to act upon your advice, and take lodgings at once, and then I can consult you. I will, if absolutely necessary, procure two doctors' certificates, as I am *determined* to use every means in my power to get cured, but I would prefer not taking anyone into my confidence in the matter. I have taken no brandy since last Wednesday, but have taken a little ale, as I have been very weak from the effects of my last orgy. The habit of taking soda and brandy grew insensibly on me until my health fairly broke down. Our own practitioner did not understand the case, so he sent me to London to Dr. Lionel Beale, who told me that I was suffering from kidney disease brought on by drinking, and that if I continued drinking I should die. He ordered me a sea voyage to New Zealand, to which place I went, accompanied by my wife. I got rid of the kidney disease on the voyage, but I could not keep from the curse for long together. Thank you for your letter, and I hope you will be able to cure me."

I again heard from the patient's brother, who wrote, "I will give you an indemnity, and my father will join also in one, if you wish to be protected against law on my brother's part hereafter, though I am quite sure there is no risk of that, for he is perfectly willing to go under control."

Under these unpromising circumstances, with a disease of four years' duration, the patient came to lodgings near Dinsdale Spa, accompanied by his wife and brother.

The patient, a well-made, gentlemanly man, aged about 36, shy in his manner, better able to express himself in writing than in conversation, had a broken-down look about him, a pale, rather sallow countenance, with an anæmic appearance. His lips were pale and slightly quivering, the heart's action feeble, and the pulse very small. His appetite was bad, the tongue flabby and furrowed, and the nights often restless. He was to be under his brother's personal care, and have no stimulants. His craving for drink, which was very great, was to be satisfied with the sulphuretted-calcareous water of the Dinsdale Spa, which I trusted would act sufficiently upon the bowels, without other medicine. I ordered him "Easton's Syrup," a convenient method of giving strychnia,

iron, and quinine. I directed him to take regular exercise, although he was too feeble to walk far, regular meals and hours of rest. Fortunately, he was willing to do this, and to be under control, for I pointed out how serious his case was, as regards the general break-down of his health. His mind also appeared somewhat feeble, though he was intelligent, but the danger to his bodily health was greater than that to his mental state. He was satisfied with the spa water, and began at once to improve. This improvement went on rapidly, so that in a month's time he had gained colour and flesh, cheerfulness of spirits, being more hopeful about himself. The party made excursions to various places during the time they remained, and the result was so great a benefit, that they decided upon going home. I continued to give him tonics, and corresponded with him, so that he was virtually under my treatment for three or four months In October last, he wrote me himself:—"I think that I can now venture to report myself completely cured. I have had no relapse since I last saw you, nor do I ever suffer from any temptation to revert to my former ways of life. I shall always feel most grateful to you for the very kind interest that you have taken in my case." I again had a letter from him, dated January 3rd, 1877, in which he says, "I am still going on well, and have no longer the slightest fear of relapsing into my old course."

This case must be considered a most satisfactory one. It is evident that without the presence of an elder brother, this gentleman could not have been sufficiently under control, for it would have been impossible, and also illegal, for me to have used an attendant who could exercise any other than moral restraint upon the patient. Except for the favourable conditions by which he was surrounded, nothing could have been effected without legal control in a proper establishment, and I very soon told him it was certain I could not receive him into my house as a certified patient.

It would be useless to bring forward any more cases, to show how difficult it is to treat these persons in such a manner as to ensure their control and recovery. There is no doubt a considerable portion may be cured, but the voluntary establishments are not sufficient for the purpose. I am repeatedly asked to send attendants to these drink-cravers, and in some instances I have done so, but it is difficult to do much good when the patient is at home, and cannot legally be controlled.

The saddest cases of all, are where ladies of education give way to a craving for drink, and I am sorry to say the instances of this kind are by no means rare. The habit produces a low moral tone, a tendency to make excuses, which ends in positive untruthfulness, and deterioration of character. If any one can point out what is to be done for these cases, besides legal control, I, for one, shall be glad of the information.

Dr. Barkus thought it was necessary to have some legal means of restraining cases of habitual drunkards, such as Dr. Eastwood had described. He would give such a measure all the support he could.

Mr. Shiell endorsed Dr. Eastwood's experience. He thought medical men ought to be especially careful in ordering strong tinctures, chlorine, ether, &c. He thought it would be necessary to restrain habitual drunkards for 12 or 24 months. He would heartily support Dr. Eastwood in trying to get some legislation on the matter.

Dr. Denham also supported Dr. Eastwood's proposal. He advocated in these cases the immediate stoppage of all stimulants.

Dr. McDowall agreed with Dr. Denham that in such cases all stimulants could be safely stopped at once. He doubted whether the habitual drunkard was ever really reformed. The habitual criminal, if he were kept in prison for any number of years, would probably steal or commit some of his old crimes the moment he was released. He thought the habitual drunkard would, in the same way, return to his drink.

Mr. H. E. Armstrong endorsed Dr. Eastwood's views, and would support him in asking for legislation.

The President cited some examples of the baneful effects of drink on females, and asked Dr. Eastwood for some information as to the form of the bill which it was proposed to introduce.

Dr. Eastwood briefly replied, and said he had not sketched the form of the proposed bill, for he had only received it two days ago from London. He handed a copy of the bill to the president.

Dr. Bramwell then read part of his paper on Progressive Pernicious Anæmia.

PROGRESSIVE PERNICIOUS ANÆMIA.

By BYROM BRAMWELL, M.B.,

PHYSICIAN AND PATHOLOGIST TO THE NEWCASTLE-ON-TYNE INFIRMARY.

Mr. President and Gentlemen,—Many years ago, the famous Dr. Addison described "a very remarkable form of general anæmia occurring without any discoverable cause whatever; cases in which there had been no previous loss of blood, no exhausting diarrhœa, no chlorosis, no purpura, no renal, no miasmatic, glandular, strumous, or malignant disease," and termed it "*Idiopathic.*"

Dr. Wilks subsequently published in the Guys' Hospital Reports several cases.

The disease was, however, lost sight of until it was re-discovered a few years ago by Dr. Biermier, of Zürich, under the name of Progressive Pernicious Anæmia. "In five years this observer met with fifteen cases of the affection in patients varying from 18 to 52 years of age, the majority being women. It frequently followed chronic diarrhœa, and child-bearing seemed especially to predispose to it. Those affected became extremely pale, and the skin of their hands, feet, and face, acquired a swollen look. They became weak, had fits of giddiness and palpitation of the heart. The appetite failed and there was a feeling of pressure in the pit of the epigastrium. Transient diarrhœa often occurred, and there were attacks of feverishness without the fever assuming any particular type. Anæmic murmurs were sometimes present of such intensity that organic disease of the heart was suspected, but none was ever found after death. With all these symptoms of failing health it is a very remarkable fact that no actual diminution of the fat covering the body could be made out. As the disease progressed, eechymoses appeared in the retina, even though vision remained intact. Sometimes there were small petechiæ under the skin, and less frequently hæmorrhages took place from the nose and kidneys. Transient paralyses were probably due to small hæmorrhages into the brain substance. Towards the end of life dropsy set in, and delirium also occurred. The course of the disease was always chronic, and the termination always fatal. The necropsy invariably showed a partial fatty degeneration of the papillary muscles of the heart, and fatty degeneration of the small blood vessels of various organs. No treatment was of any avail."—*Medical Times and Gazette*, Nov. 21, 1874.

Very few cases have hitherto been published in this country. I purpose in this paper to place on record the cases I have met with. They are six in number. Five males and 1 female. Of the whole number three died and three recovered.

CASE I.—*Profound anæmia following yellow fever. Vomiting, diarrhœa, irregular elevations of temperature. Marked alterations in the microscopical characters of the blood. Retinal hæmorrhages. Recovery.*

Alfred Rush, æt. 20, a sailor, was admitted to the Newcastle Infirmary, under my care, on the 21st of March, 1875, suffering from profound anæmia.

Previous History.—He was quite well until four and a half months ago, when he was attacked with yellow fever. He was laid up with the disease for six weeks. After getting better he caught cold, and has been ill since. He came into the Tyne about Christmas, and was at once admitted to the Floating Hospital, where he has been under the care of my brother, Dr. J. W. Bramwell. His feet and legs have been swollen. He has had a slight cough, has frequently vomited, and has been every now and again confined to bed for a day or two with irregular attacks of fever. He has had several attacks of epistaxis, and has been frequently severely purged.

He has taken large quantities of quinine and iron, together with the mineral acids and a liberal diet. In spite of all treatment he is no better.

He has not had syphilis.

Present Condition; General Appearance.—He is tall, fair, hair light brown. His face looks slightly puffy about the eyelids, and is of a pale lemon hue; the skin is smooth and waxy, the lips and mucous membranes very anæmic. The conjunctivæ are slightly yellow, and there is a small yellow deposit of fat at the inner canthus. The pupils are dilated, but contract readily on the stimulus of light. The feet are not now œdematous.

Alimentary System.—The lips and gums are markedly anæmic. The tongue is clean, smooth, pale, moist, and slightly flabby; the appetite very poor, and there is considerable thirst. He frequently vomits; the vomited matters are sometimes green, sometimes yellow. The bowels are regular, the motion light coloured and semi-solid.

The abdomen is flaccid and tympanitic on percussion. The splenic dulness is somewhat increased. The size of the liver is normal.

Circulatory System.—The heart is of normal size. A soft systolic murmur is audible all over the cardiac area; its point of maximum intensity is the apex. The radial pulse numbers 112, very weak, easily compressible with a slight thrill, and visible.

Respiratory System.—He complains of soreness on taking a full respiration. A few sibilant and sonorous râles are heard over both lungs. There is no cough nor spit.

Urinary System.—The urine is very pale in colour. Sp. gr. 1017. It contains no albumen.

Nervous System.—He complains of headache. The nervous system is otherwise normal. On ophthalmoscopic examination the discs are found to be normal.

The temperature is 99° F.

A drop of blood was drawn from the finger in the usual way. It was thin and watery and of a dirty red colour; it speedily separated into two parts, one coloured and the other colourless, looking just as if a drop of colourless oil had been added to a red liquid. On microscopical examination it presented the following characters:—The red globules were diminished in number, and did not form rouleaux. They were markedly altered in shape; some of them being large and no longer biconcave; others irregular, and with one or more tailed like projections; others appeared nucleated, the nucleus was of a pinkish red colour. There were also numerous small red globules, indeed they (the red globules) seemed to be of all sizes from minute masses of protoplasm to the abnormally large oval corpuscles which I have described. The white corpuscles were not increased. In addition, there were many small colourless granules; some of these formed irregular masses, somewhat larger than white blood corpuscles. In one specimen an emerald green rod-shaped body about in length was observed. It seemed to move with a slight vitratile movement. Nothing of the sort was again observed; its occurence was therefore probably accidental.

Treatment.—He was ordered twenty minims of tincture of the muriate of iron three times a day.

SUBSEQUENT PROGRESS OF THE CASE.

On March 22nd he was not so well, having vomited several times through the night.

On March 23rd he was still worse, the evening temperature was 105° F. The iron was discontinued, and a febrifuge mixture was substituted. He complained of pain and tenderness on pressure about the umbilicus.

On March 24th he complains of dimness of vision. On ophthalmoscopic examination well-marked hæmorrhages were seen in both retinæ, most marked in the right.

On March 25th he was better, though still vomiting. Milk diet was ordered, and two mms. of liq. arsenicalis were prescribed three times daily.

On April 2nd he was decidedly better. The arsenic was increased to four mms. Beef-tea and chicken broth were added to the diet.

On April 13th he was still better. An ounce of lime juice was ordered.

On April 28th he was still improving. The retinal hæmorrhages were still very visible. He slowly but gradually improved, and was sent to the Convalescent Home on 17th June.

At the time of his discharge the blood had almost regained its natural appearance, the retinal hæmorrhages had almost disappeared, and the colour of the skin was fairly natural, though he was still anæmic.

REMARKS.

The profound anæmia occurring without any obvious cause, and associated with the characters of the blood and the retinal hæmorrhages which I have described, was a combination of symptoms which had not before come under my notice. I confess I was as completely puzzled as my brother had been.

On June 10th, another case similar in all respects was admitted and died on June 28th. The post mortem revealed nothing of importance. I was still as much in the dark as ever.

Soon after this date Dr. Beatson mentioned our difficulties to Professor Grainger-Stewart, of Edinburgh, who at once recognised the true nature of the affection, and referred me to the authorities I have already quoted.

I thus found that the retinal hæmorrhages which I had observed had been previously described by Dr. Biermier and others.

The peculiar condition of the blood has also been independently noted. The observations of Professor Eichhorst, of Jena, were published in the Centralblatt Med. Wiss. No. 26, 1876, and are thus translated in a note which appeared at the end of a clinical lecture by Professor Quincke, of Bern, published in the *Medical Times and Gazette*, 14th Oct., 1876 :—" He asserts that a constant alteration of the red blood corpuscles can always be detected—while a part retain their normal size and are only distinguished by their remarkable paleness and slight tendency to form rouleaux, the remainder immediately attract attention by their diminished size. Their diameter may scarcely be a quarter of a healthy corpuscle, while their colour is of a deeper red than normal, and when seen in profile they are seen to have more or less completely lost their biconcave outline. Their size may be even so much diminished that many of them resemble small red-tinted fat drops. The alteration here described has not been detected in anæmic and cachectic conditions other than pernicious anæmia. The white corpuscles were present in all the cases observed (seven in number) in remarkably small proportions."

This description tallies remarkably with my own. In many of my cases, some of the red globules were apparently nucleated, others were much smaller than a quarter that of a healthy corpuscle. I failed to observe that they, *i.e.*, the small red globules, were of a deeper red than normal. Those small red

globules which were apparently nucleated, certainly had the appearance Professor Eichhorst describes; but only a few of them were nucleated. The small red globules which were not nucleated were of a very pale yellow colour, in fact, of the same colour as the large red globules. In one case, which was fatal, numerous small emerald green molecules were seen; they were probably not of much consequence, for I have noted their presence, though never in the same number, in other diseases.

In the clinical lecture, to which this note was appended, Professor Quincke states that in his cases the red blood globules were diminished and altered in shape and size, some of them smaller than normal, and amongst them there were a number of tiny yellowish particles. In several cases, he says, "those finely granular masses, which are sometimes lustreless and sometimes shining, and which are common in the blood of cachectic individuals, were found in great abundance." In his eighth case they were so abundant that they rendered the serum of the blood cloudy.

This cloudy appearance was not present in any of my cases.

I have detailed the microscopical characters of the blood at length, for they are of great diagnostic value. The nucleated appearance which some of the red globules presented has not, I think, been before observed. Until quite recently I was inclined to think the nucleation only apparent, and produced by an indentation, or curving in, of the corpuscle at one point. Most of the nucleated corpuscles were so indented. The appearance may, however, be of more importance than I at first supposed. In the *Edinburgh Medical Journal* for the present month (March, 1877) there is an account of the *post mortem* appearances found in a case of progressive anæmia by the celebrated German pathologist, Cohnheim. He found the following marked alterations in the marrow of the bones:—

"The marrow of all the bones, not only that of the skull, sternum, and the ribs, but also that of the long bones in their diaphyses as well as their epiphyses, was of an intensely red colour, not due to hæmorrhage. When examined with the microscope, this marrow showed a complete absence of the usually abundant fat cells. Instead of these, there were—first, numerous colourless corpuscles—the so-called marrow cells, some like lymph corpuscles, but many of large size, with one or two bladder-like nuclei, and along with these there were a few multinucleated giant cells; second, there were, in at least equal quantity, coloured elements. Among these latter there were only a small number of biconcave blood-corpuscles; there were in greater proportion spherical red corpuscles, without nuclei, and varying in size from the diameter of a red to twice that of a colourless corpuscle. The coloured cells, which were most abundant, were red nucleated cells. These also were of different

sizes, but on the average, did not exceed that of the smaller epithelioid marrow cells. Their nuclei, which were of the same yellow tint as the protoplasm, were of different sizes, and were generally single, but in some instances double. Their bodies were possessed of great elasticity, for they could be drawn out to a fine point, and if flattened beneath the cover glass, they at once regained their spherical shape when the pressure was withdrawn. On the whole, therefore, the marrow was thus reduced to a condition similar to that which is nominally present in the bones of the fœtus. A few nucleated red corpuscles were found after death in the spleen, and in the clots taken from the vessels. But although the blood had been repeatedly examined during the life of the patient, none had been then found in it."—*Edin. Med Journal*, March, 1877, page 834.

The following is the history of my second case :—

Case II.—*Profound causeless Anæmia. Skin smooth and ivory-like, of a slight yellow tinge. Hair prematurely grey. Red blood corpuscles diminished in number, and of all shapes and sizes, many of them apparently nucleated Numerous Retinal Hæmorrhages. Vomiting. Great restlessness. Delirium. High temperature. Death. Post mortem Appearances. Bloodless condition of body. Fatty degeneration of heart, aorta, liver, kidneys. Small Calcareous deposit in mitral valve. Enlargement of spleen and thyroid. Mammillated appearance of stomach.*

John Hall, æt. 34, grocer's assistant, single, living near Houghton-le-Spring, Durham, was admitted on June 10th, 1875, complaining of great general weakness.

Previous History.—Has never been very strong, but was never laid up. Present illness commenced two years ago with loss of strength. He noticed at the same time that he was getting paler and paler. He has not had syphilis, nor any exhausting discharge. Has had a comfortable dry home. Has never had intermittent fever. For the last few months he has been very much worse. His feet and ankles have swelled. He has occasionally vomited. Has drunk beer to excess for fifteen years. He knows no cause for his present illness.

Family History.—Particularly good.

State on Admission.—He is too weak to walk. Whenever he sits up he feels giddy and faint. The face has a pale yellow tinge, and is slightly swollen. He is profoundly anæmic. The skin has a yellowish-white glistening appearance. The hair is grey, it used to be black, the eyebrows dark and bushy. The conjunctivæ are slightly yellow. The pupils are moderately dilated, and very sensitive to light. Ophthalmoscopic examination is difficult owing to the fact that whenever the light is thrown into the eye the patient

moves his head to one side or shuts the eye. After dilatation with atropia, a good view was obtained, and the retinæ was seen to be spotted with numerous extravasations. Sight, he said, was good, and always had been so. The vessels of the disc were so bloodless as to be almost invisible. Some of the veins of the retina were congested in the form of streaks. The hæmorrhages were chiefly in the course of the vessels.

The feet are slightly œdematous. The temperature is normal.

Alimentary System.—The lips and gums are highly anæmic. The patient is thin; the muscles being soft and wasted. Muscular irritability is very marked. The tongue is very pale, clean, and moist. The appetite poor. He occasionally vomits, but not at any particular time. The vomited matters are green or yellow, and very bitter. The bowels are costive. For the last four months he has had internal piles, but has only once passed a little blood.

The liver dulness measures five inches. The splenic dulness is somewhat increased.

The blood presents the same character, but even more marked than in the previous case. The red globules are greatly diminished in number, and are of all shapes and sizes. Many of them are apparently nucleated. The white corpuscles are few; some of them small, others large and oval.

Circulatory System.—The cardiac dulness is increased transversely extending from the left border of the sternum to the left nipple. The action is uncertain, and somewhat tumultuous. There is a well-marked apex systolic murmur. The pulmonary sounds are louder than the aortic. A loud venous hum is heard in the internal jugular veins. Both external jugular veins are distended and knotted, but not pulsating.

The radial pulse is 100, regular, with a slight thrill. Very weak.

The respiratory organs are normal.

The urine is natural.

Nervous System.—He is very restless, constantly tossing about in bed. Sleep is disturbed and fitful. The feet and legs are œdematous.

Treatment.—A grain of quinine three times a-day, with milk and beef-tea *ad libitum*, was prescribed.

Subsequent Progress of the Case.—For the first few days after his admission he remained in *statu quo*.

On June 17th he was ordered twenty drops of the tincture of the muriate of iron thrice daily.

June 18th. He is to-day much worse. Very restless, constantly tossing about in bed, complaining of thirst, the tongue is moist. The temperature 102·6° F.

June 19th. Still worse. He tossed about and moaned all night, complaining of aching pains in his legs and of a choking feeling in

the throat. The thyroid is markedly enlarged, especially the left lobe. (This enlargement was not complained of nor observed before). The iron to be discontinued, and to have half an ounce of lemon juice and two grains of quinine three times daily.

June 21st. Rather better; the temperature and pulse have both fallen; he has vomited twice after taking the powders; was ordered two ounces of brandy. The temperature to-day is 103·8 degs. F.

June 23rd. Is worse; face has a sunken appearance.

June 24th. Had a very bad night; very restless, and at times delirious. He worked with his fingers about his neck, saying there was something there which was choking him.

June 25th. He died at 10·40 a.m. to-day. The temperature rose rapidly before death; the highest point observed was 105 degs. F.

I took the temperature at 12 a.m., an hour and twenty minutes after death; it was then 102·8.

Autopsy—External Appearances.—Four hours after death. The body was warm; skin of a pale yellow hue. The abdominal parietes contained a fair amount of fat. The feet and legs were œdematous.

Thorax.—The pericardium contained a few ounces of yellow serum. The heart weighed 13½ ounces, and was well covered with fat. On the anterior wall of the right ventricle, just over the position of the tricuspid valve, there was a large milk spot; another smaller one was situated on the anterior surface of the apex. On the anterior surface of the left ventricle, half an inch above the apex, there was an extravasation of blood as big as a threepenny piece. The cavities of the organ were almost empty, the only contents being about three teaspoonfuls of thin fluid blood. The posterior segment of the mitral valve contained a small calcareous deposit, and was somewhat shrunken. The cavities were dilated; the muscular substance very soft and friable. The interior of the left ventricle, especially the papillary muscles, was dotted with little yellow spots of fatty degeneration. The interior of the aorta was spotted here and there in a similar manner. Under the microscope the cardiac muscle was seen to be decidedly fatty.

Lungs.—The left was pale and bloodless, weight 9¼ ounces. The right was slightly adherent at the apex; it weighed 1 pound 4¼ ounces. There was a commencing consolidation at the posterior part of the upper lobe. On section of this part, a considerable quantity of red serum escaped.

The bronchial glands were not enlarged.

The *Thyroid* was the size of a hen's egg. It weighed 2½ ounces. Both lobes were enlarged. On section, it was seen to be in places yellow and gelatinous, in others of a purple colour, at the lower part of the left lobe was a calcareous mass.

The *Liver* weighed four pounds and half an ounce, and was fatty.

The *Spleen* weighed 9½ ounces, was of a uniform dark purple colour, firm. On microscopical examination, nothing abnormal was detected.

The *Kidneys*.—The left weighed 7 ounces, the right 5½. Both were embedded in fat. The cortical substance was pale. On microscopical examination, the renal epithelium was in places fatty.

The *Stomach* in the neighbourhood of the pylorus was studded with small round projections. These projections were arranged in rows; on microscopical examination they were found to consist of round lymphoid cells. The mucous membrane of the small intestine seemed softened. The various coats of the gut were more loosely connected than in health.

The *Supra-renal Capsules* and other organs were healthy.

The *post mortem* of important appearances may be summed up as a bloodless condition of the body, fatty degeneration of the heart, aorta, liver and kidneys, enlargement of the thyroid and of the spleen, and a mammillated appearance of the stomach. The small calcareous deposit in the mitral valve was not of great moment. The condition of the right lung was quite recent, and had nothing to do with the essential pathology of the disease.

The bloodless condition of the body and the fatty degeneration have been observed in all cases. The enlargement of the spleen has also been previously noted. The enlargement of the thyroid has not, I think, been before seen, it was probably, therefore, an accidental complication. The mammillated appearance of the stomach is interesting. This condition sometimes occurs in Addison's disease, and is described by Dr. Greenhow.—*Cronian Lectures*, 1875, page 28.

I regret that the medulla of the bones was not examined. Prof. Pepper, of the University of Pennsylvania, who has written a very able paper on the subject, was the first to describe an abnormal appearance of the marrow, and founded on it a theory as to the nature of the affection. He thinks progressive pernicious anæmia is simply the medullary form of pseudo lenkiemia. Since the appearance of Prof. Pepper's paper, the marrow has been examined by other observers. Some, as Dr. Bradbury, of Cambridge, have failed to find anything abnormal. Others, as Prof. Cohnheim, have found marked change.

The constant occurrence, therefore, of the marrow lesion is still sub judice.

The next case was also fatal.

Case III.—*Profound Anæmia following an attack of Yellow Fever. Marked alteration in the red blood corpuscles. Retinal Hæmorrhages. Obstinate Diarrhœa Anæmic Murmur at base of heart*

and in vessels of neck. Giddiness and Faintness on exertion. Death. Autopsy. Bloodless condition of body. Fatty degeneration of heart and liver. Œdema of left leg. Slight ulceration of small intestine at ileocœcal valve.

F. Niefert, æt. 28, sailor, was admitted on August 16th, 1875, complaining of diarrhœa and great debility.

Previous History.—Had yellow fever seven months ago, and has been out of health since. The diarrhœa commenced a fortnight ago.

Before the attack of yellow fever, he was a healthy man. Has not had syphilis.

Present Condition.—He is thin, emaciated, and markedly anæmic. The skin has a slight yellow tinge. The conjunctivæ are perfectly pearly. There is slight œdema about the eyelids but nowhere else. He is very weak, hardly able to walk across the room. Whenever he gets up he feels a "swimming" in the head, and has on more than one occasion tumbled down. The blood presents exactly the same appearances as in the two previous cases. On ophthalmoscopic examination, a few retinal hæmorrhages of small size were seen in both eyes. The disc and surrounding retina are markedly pale, the arteries being hardly distinguishable from the veins.

A soft blowing systolic murmur was audible at the base of the heart, and there was a loud venous hum in the veins of the neck. The pulse numbered 84 in the minute, and was small and weak. The tongue was smooth, pale, and moist. The appetite good. He complained of constant thirst.

The abdomen was considerably distended with flatus, and in consequence the exact limit of the hepatic and splenic dulness could not be defined.

The urine amounted to 59 ounces in the 24 hours, and was pale and slightly acid. Its sp. gr. was 1008. It contained the slightest trace of albumen. On microscopical examination of the deposit, which was scanty, a few squamous epithelium and pus cells were seen.

The temperature was normal.

The other systems and organs are normal.

Treatment.—He was ordered milk diet and an astringent mixture.

Subsequent Progress of the Case.—He was purged several times during the first 24 hours after his admission. The motions were watery, light-coloured, very offensive, liquid, and frothy.

August 20th. The abdomen is to-day flaccid. The liver dulness measures 5 inches. There is no pain nor tenderness anywhere. The diarrhœa is checked. He was ordered eight grains of sulphate of quinine three times daily.

August 28th. Was again severely purged. The chalk mixture was again administered.

August 30th. Very much worse; the diarrhœa still continues. He has a sunken expression. To have 8 ounces of brandy mixed with raw eggs.

August 31st. Diarrhœa has stopped. He enjoyed his egg, but is of anything more sunk and prostrate.

September 1st. He died this morning at half-past five.

The *post-mortem* was made ten hours after death. The body was considerably emaciated. Rigor mortis was strongly marked.

Heart.—The pericardium contained two ounces of clear yellow serum. There was a small milk spot on the anterior surface of the left ventricle. The cavities of the heart contained a small quantity of thin liquid blood. The segments of the aortic valve were slightly thickened. The valve was competent. The muscular substance was mottled with spots of fatty degeneration, and was very friable. The heart weighed 10 ounces.

Lungs.—Both were adherent throughout, the adhesions very firm and dense. The left weighed 1 lb. 11 oz. On section, it was very œdematous, especially the lower lobe posteriorly. The right weighed 1 lb. 8 oz., and was bloodless. A small quantity of frothy serum escaped from the lower lobe on section.

The liver weighed 3 lb. 12 oz. It was pale and fatty.

The spleen weighed 3½ ounces, and was normal.

The stomach contained about a pint of yellow-ochre-coloured fluid, and was normal.

The intestines contained a large quantity of yellow-ochre fluid similar to that found in the stomach. The mucous coat was very easily stripped off, and seemed softened. At the ileocœcal valve there was a small superficial ulceration the size of a sixpence.

The appendix vermiformis contain a small concretion.

The mesenteric glands were somewhat enlarged.

Kidneys.—Both weighed 6¼ ounces. Both were smooth, fatty, and pale and bloodless.

The *supra-renal* capsules were normal.

The *thyroid gland* was normal.

The *brain* weighed 51½ ounces, and was normal.

The body was almost bloodless. The blood, where present, was thin and fluid.

The *marrow of the bones* was not examined.

REMARKS.

It is etiologically important to note that this patient had had an attack of yellow fever, and that his illness date therefrom. The same history was present in case I. already related.

Case IV.—*Profound Anæmia with emaciation. Changes in size and form of red globules. Numbness and loss of power in hands*

and feet. Difficulty in walking from debility and intensity of reflex movements. Great improvement under quinine and arsenic.

Thomas Ross, æt. 43, single, a cartman, was admitted on 18th March, 1875, complaining of weakness and inability to walk.

Previous History.—Enjoyed excellent health until three years ago, when he was laid up for some weeks with swelled feet and yellowness of the face. The doctor who attended him said he had a liver complaint. After recovering from this illness he continued until Christmas, when he caught cold while working in a wet drain. He felt weak and ill, but managed to work until five weeks ago. He then felt a numbness and loss of power in both hands. This was followed by weakness in the legs and inability to walk.

He has been a hard drinker of spirits.

Twenty years ago he had a chancre, but no secondary symptoms.

Present Condition.—Patient, who is a big made man, is sallow, thin and emaciated. The skin is dry and wrinkled. The mucous membranes are markedly anæmic.

He has great difficulty in walking, and his gait is very peculiar. He takes very long strides, and throws out his legs in an uncertain jerking manner. His back is slightly arched, the bend thrown back, the arms extended one on either side, the palms being turned backwards, his fore finger and thumb of each hand approximated. When in bed he can move the legs in any direction. The reflex movements on tickling the soles of the feet are intense. The contractility of the muscles to electrical currents is considerably diminished. There is marked loss of grasping power in both hands. He is unable to approximate the thumb and fore finger, hence cannot pick up a pencil from the table nor button his clothes. Sensibility to heat and cold is natural. He can localise impressions perfectly. He complains of pins and needles and numbness in both hands and in the legs behind the knees. He complains of pain and tenderness on pressure over the lumbar region. On the application of the hot sponge, nothing unusual is elicited. There are no ataxic symptoms.

Sight is dim, and has been failing for two years. The pupils are contracted. On ophthalmoscopic examination after dilatation with atropia, the fundus could not be very distinctly seen owing to slight opacity of the vitreous.

The other special senses are normal.

The reflex functions are normal.

Circulatory System.—The heart sounds are very weak. There is a soft systolic murmur at the apex. The area of cardiac dulness is small. The radial pulse is 56, very soft and weak, regular, slightly visible, and jerking.

The respiratory and urinary systems are normal.

The appetite is good, the tongue clean, the bowels regular. The liver and spleen seem normal.

On microscopical examination of the blood, the red corpuscles went into clusters, but not into regular rouleaux. Many of them were tailed. Many of the red corpuscles were smaller than natural. None of them were nucleated. The white corpuscles seemed slightly in excess.

The treatment consisted in the administration of iron, quinine, cod liver oil, lime juice, and arsenic, in the order named, together with a liberal diet.

He improved slowly at first, but after commencing the arsenic the improvement was marked and rapid.

The urine once or twice contained a trace of albumen, but no casts.

He discharged himself, saying he was fit for work, on July 22nd, having been in hospital 126 days.

REMARKS.

The diagnosis in this case was not so certain as in those previously related. The condition was one of profound anæmia, with marked changes in the microscopical characters of the blood. Changes which, Professor Eichhorst says, are peculiar to and characteristic of the disease.

The intensity of the reflex movements was remarkable, indeed so great was it that a condition of incomplete pseudo-paraplegia was present. The great debility, of course, contributing to this condition caused the difficulty in walking. The intensity of reflex movement, and the diminution of sensibility were, no doubt, due to the mal-nutrition of the nervous centres.

CASE V.—*Profound Anæmia following Pregnancy. Vomiting. Diarrhœa. Retinal Hæmorrhages. Death. No Autopsy.*

Mary Bird, æt. 29, married, living at North Shields, was seen by me, in consultation with my brother, Dr. J. W. Bramwell, on September 14th, 1875.

Previous History.—She was quite well until after her last confinement, which took place eight months ago. Since that date she has been gradually getting paler and weaker. She knows no cause for her illness. The labour was easy, and not followed by any excessive discharge. Of late she has suffered from occasional attacks of diarrhœa and vomiting. The matter passed from the bowels was on one occasion black, like tar. She has not menstruated since her confinement. She weaned the child some months ago.

Present Condition.—She was profoundly anæmic, but well nourished. The face was slightly swollen, and of a greenish-yellow hue. The skin was very smooth and ivory-like. The pupils were equal and moderately dilated. The sight was dim.

(This had been the case for three months.) There were well marked hæmorrhages on both retinæ, the discs were very pale, and the vessels almost empty. She complained of pains and giddiness in the head. She was unable to sit up; when she attempted to do so she felt faint and giddy.

There were loud blowing murmurings at the base of the heart and in the vessels of the neck. The heart seemed a little increased in size. Before she took to her bed she was frequently troubled with severe attacks of palpitation.

The urine was copious in amount, very pale; sp. gr. 1010, but quite free from deposit or albumen.

A drop of blood was placed on a slide and was examined half-an-hour afterwards. Owing to the delay and the changes which had taken place during the transit, the examination could not be relied upon.

The abdomen was natural on inspection, palpatation and percussion. The liver was slightly enlarged. The size of the spleen also seemed a little above the normal.

Subsequent Progress of the Case.—There were two or three attacks of diarrhœa after my visit, and the patient gradually sank, and died in September.

In spite of every effort a *post-mortem* could not be obtained.

Case VI.—*Profound Anœmia. Retinal Hæmorrhages. Marked alterations in red blood corpulsces. Palpitation. Dyspnœa. Hæmic Murmurs. Vomiting. Diarrhœa. Œdema of face, feet, and hands. Yellow tinge of skin. No emaciation. Recovery under arsenic.*

John Dunn, æt. 38, married, a chemical worker, was admitted on the 26th November, 1875, complaining of shortness of breath and palpitation on the least exertion; swelling of the feet, hands, and face; and general debility.

Previous History.—Was a healthy man until seven months ago, when his present illness commenced. It was brought on, he thinks, by exposure to cold and wet. He took a shivering. This was followed by general weakness. His colour has undergone a marked change, and his hair has become greyer than it used to be. He has several times vomited, and has had frequent attacks of diarrhœa. Three months ago he was jaundiced; two months ago his face swelled; two weeks ago his feet became œdematous. He lives in a fairly healthy house; has had abundance of good and varied food. He thinks "the gas" was partly the cause of his illness.

Has been a fairly steady man, and has not had syphilis.

Family History.—Good.

Present Condition.—He looks sixty years of age. The feet, face, and hands are slightly swollen. He is extremely anæmic. The

skin has a yellow tinge. The hair grey. The conjunctivæ slightly yellow. There is a small fatty deposit at each internal canthus. There is no emaciation, but the muscles are soft and flabby. Muscular irritability is marked. His weight is 11st. 11lb.

The temperature is normal.

He is very short of breath, and suffers from violent palpitation on the least exertion. He often, too, feels giddy and faint. Loud blowing murmurs are heard at all the cardiac orifices. A mitral murmur systolic in time and propagated upwards to the left axilla being especially noticeable. Indeed, so marked was it, that Dr. Mickle, the junior house surgeon, diagnosed the case as one of cardiac dropsy from mitral insufficiency.

The size of the heart is natural. The pulmonary second sound is not accentuated. The radial pulse is 76, regular, and of fair strength.

There is a loud venous hum at both sides of the neck. The left external jugular vein is slighty distended and prominent.

On microscopical examination the blood presented exactly the same character as in the cases already described.

The tongue is clean and moist, but pale; the appetite good; there is no thirst. he vomits occasionally, and is subject to frequent attacks of diarrhœa.

The liver dulness measures 4½ inches. The splenic dulness seems slightly increased.

The thyroid gland is not enlarged.

The respiratory system is normal.

The urine is very pale, neutral, sp. gr. 1020. It is slightly darkened by nitric acid and heat, but contains no albumen.

He sleeps fairly well; occasionally suffers from headache; he complains of numbness in the hands and feet, especially after exposure to cold. Intense reflex movements are produced in tickling the soles of the feet. He says he feels unsteady when he walks. There is nothing noticeable in his gait. He stands quite steadily with his eyes shut. He complains of pain in the back, and of slight tenderness on percussion over the lumbar region. The application of the sponge test shows nothing abnormal.

Sight is dim in both eyes. The pupils are dilated, but very sensible to light. On ophthalmoscopic examination the whole fundus is very bloodless, the disc somewhat ill defined. There are no hæmorrhages.

He complained of a singing noise in the left ear; the other special senses are natural.

Treatment.—He was ordered five grains of sulphate of quinine, and fifteen drops of the tincture of the muriate of iron, thrice daily.

Subsequent Progress of the Case.—On December 3rd, he was ordered a teaspoonful of phosphorised cod liver oil three times daily.

On December 6th, the eyes were again examined with the

ophthalmoscope, and several large hæmorrhages were seen in the retinæ. The hæmorrhages were evidently recent, and the stratum of blood seemed very thin. (It is interesting to note here the fact that a few drops of atropia had been placed in each eye, and that extreme dilatation had resulted therefrom. It was only after this dilatation had continued for some days that the retinal hæmorrhages were observed.)

December 15th. He was worse. The temperature yesterday was 100·2, the pulse 120. The iron was discontinued, and liq. arsenicalis substituted, two minims thrice daily.

December 18th. Dose of liq. arsenicalis increased to iv minims.

December 28th. Dose increased to vi minims.

December 31st. Feels himself a little better. The numbness of the hands is less. There is more œdema than on his admission. The liver dulness now measures 6 inches. The splenic dulness is also increased.

January 11th. Very much better. Shortness of breath much less. Colour of skin more natural. The dose of liq. arsenicalis increased to viii minims.

January 20th. So much better that he asked to be made an out-patient. The dose of liq. arsenicalis increased to xii minims.

March 6th. Still improving. Dose of liq. arsenicalis xvi t.d.

April 24th. Says he never felt better in his life. His colour is now quite natural. His hair is in places growing darker. He is not in the least short of breath. All cardiac murmurs have disappeared. He looks fifteen years younger than he did on his admission to the hospital. His sight is not quite good. The blood is normal.

He presented himself once every month, and always reported himself well.

He was last seen on February 3rd, 1877. He stated that he was quite well and that he had never lost a single day's work since he started at the end of March last. The blood was normal, his colour was pale, but very much better than on his discharge. Sight was still a little dim.

REMARKS.

This case is of great interest from the fact that recovery took place and was clearly due to the administration of arsenic. The same good effect also followed the use of this drug in cases i. and iv. already related.

In the latter cases (i. and iv.) the drug was used empirically, for I was not then acquainted with the *post mortem* appearances, one of the most important of which is fatty degeneration of the heart. Now, it is well known that arsenic is a most valuable cardiac tonic, and that it is especially useful in cases of fatty degeneration.

Remembering this, and also the fact mentioned by Anstie, that arsenic is a most valuable tonic of the blood, I gave it, and pushed it in Dunn's case.

Although the result was all that could be wished for, yet, I would not have it for a moment supposed that arsenic will be found a specific for the disease. It is impossible to reason on a single case, however successful, and if I remember rightly, Professor Pepper tried it without any good result in one of his cases.

The explanation probably is, "that we have not to deal with a single diseased condition, but that pernicious anæmia, just like anæmia in general, is the product of extremely various morbid processes, and represents the very last stage of the anæmic process." —(Professor Qunicke's Clinical Lecture, *Medical Times and Gazette*, Oct. 14, 1876.)

It is, however, highly satisfactory to be able to point to a single case in which recovery so obviously followed treatment, and that in a disease which in the experience of many is uniformly fatal.

It was unanimously resolved, on the motion of Dr. Eastwood, that the remainder of the paper be taken as read and printed in the Transactions.

It was also unanimously resolved that the discussion on the paper take place at the next meeting.

NORTHUMBERLAND AND DURHAM

MEDICAL SOCIETY.

An adjourned meeting of this Society was held in the Library of the Newcastle-on-Tyne Infirmary, on Thursday, April 12th, 1877, Mr. Morgan (President) in the chair.

The following gentlemen were elected members of the Society:

W. B. Kilburn, M.R.C.S., Eng., West Auckland.
James Richard Lownds, M.R.C.S., Eng., Newcastle.

A copy of "the Diseases of the Tongue" was presented to the Society by Mr. Fairlie Clarke, the author.

DISCUSSION ON DR. BRAMWELL'S PAPER,

("PROGRESSIVE PERNICIOUS ANÆMIA.")

Mr. Morgan said: I have seen four cases of profound anæmia within two years.

The first was in a child, and was that form which is associated with congenital enlargement of the thyroid, and so can hardly be considered the same disease as that spoken of by Dr. Bramwell; but it was so far allied to it that there was the bloodless appearance, palpitation, and soft systolic bruit. The second case was in the person of a man between 50 and 60, who was crushed by an iron plate falling against him, and on that account was seen by me. I found him so blanched in appearance that at first I thought he must have had severe hæmorrhage, until I was assured by his wife that it was his ordinary appearance. His injury was very trifling, and had his general health been good he would have soon recovered; but his anæmia was so great that the shock of the accident was more than he could rally from, and he died exhausted in about a month. There was no albuminuria nor other apparent cause to account for his extreme pallor. The third case occurred in a young woman after her first pregnancy, and was precisely similar to case No. V. of Dr. Bramwell's series. There had been neither hæmorrhage nor shock, nor albuminuria; and, as in his case, treatment, chiefly iron and quinine, failed to relieve, and she

died in seven months. The fourth case is at present under observation. The patient is a lady about 50 years of age, and the change of life is occurring. After some months of continuous fatigue and anxiety she became weak and ill, was jaundiced, and has since continued anæmic. There is no albuminuria, nor has there been hæmorrhage or diarrhœa, yet walking across the room makes her breathless, and brings on distressing cough and palpitation. In this case the ophthalmoscope has not yet been used, nor has she tried arsenic.

Dr. DODD said: Dr. Bramwell had made no mention of hereditary transmission. In one case he knew of, the father and two sisters died from the same disease. In these cases there was no hæmorrhage. The patients were flabby and extremely anæmic. There were no signs of visceral disease.

Dr. EMBLETON remarked, with regard to the name of the disease, "*Progressive Pernicious* Anæmia," that some of the cases progressed to recovery. In his opinion, all cases of anæmia are pernicious. He had seen several cases some years ago; some followed ague, others exhausting causes. The blood corpuscles were small in number, and variously deformed. Under quinine, iron, strychnia, rest, and good diet, the blood rapidly became renovated, and a cure was ultimately established. "*Pernicious*" ought to be accurately defined.

The PRESIDENT remarked that these cases differ from ordinary cases of anæmia, inasmuch as iron does not act beneficially. He thought the disease might be called "Causeless Pernicious Anæmia."

Dr. EMBLETON said iron combined with strychnia was often efficacious when iron alone failed.

CASE OF UTERUS SEPTUS AND VAGINA SEPTA.

By JAMES MURPHY, M.B.

Mr. President and Gentlemen,—As cases of divided uterus and vagina (a condition normal in the marsupalia) are not very common, and as they possess a certain amount of interest, from an embryological point of view, I thought it desirable to bring before the notice of this Society a case that is at present under my care, in which both these conditions are very well marked. But, first, I may say a few words on the etiology of this malformation. The whole female genital canal, from the vulva to the fimbriated extremities of the Fallopian tubes is formed out of two, originally separate tubes, called from their discoverer "Müller's ducts." Now, while the upper portions of these ducts which go to form the Fallopian tubes remain separate, under ordinary circumstances, the lower portions, which go to form the uterus and vagina, become as it were fused together at the eighth week of embryonic life; and it is when they fail to coalesce that we have developed those conditions which are known as Uterus Septus and Vagina Septa.

Mrs. T., æt. 32, married for seven years, never pregnant, consulted me a little time ago about a small cyst in her right labium, and on examination, I also found the following conditions present:—A septum springing from each labium minor, a little anterior to the fourchette, extended to the uterus, completely dividing the vagina into two portions, an anterior and larger canal, and a posterior and smaller one. This septum, which was, at its commencement, about a tenth of an inch in thickness, but gradually got thinner as it approached the womb, was composed of a strong dense tissue, covered with squamous epithelium, composed of those large cells peculiar to the vagina, with the mucous membrane of which it was continuous.

The anterior canal was slightly smaller than a normal vagina, and the posterior one something smaller than its fellow; but the two combined were not much larger than an ordinary vagina, for when one canal was dilated it encroached on the other, as the septum could be stretched to a considerable extent. The vulva was normal, and the carunculæ myrtiformes were well developed round the commencement of each vagina, so that it is probable a double hymen existed.

In the anterior canal was a cervix quite normal as to situation and form, but the size a little less than usual. Through the os a sound could be passed to the extent of about two inches, but there was a slight amount of stenosis present

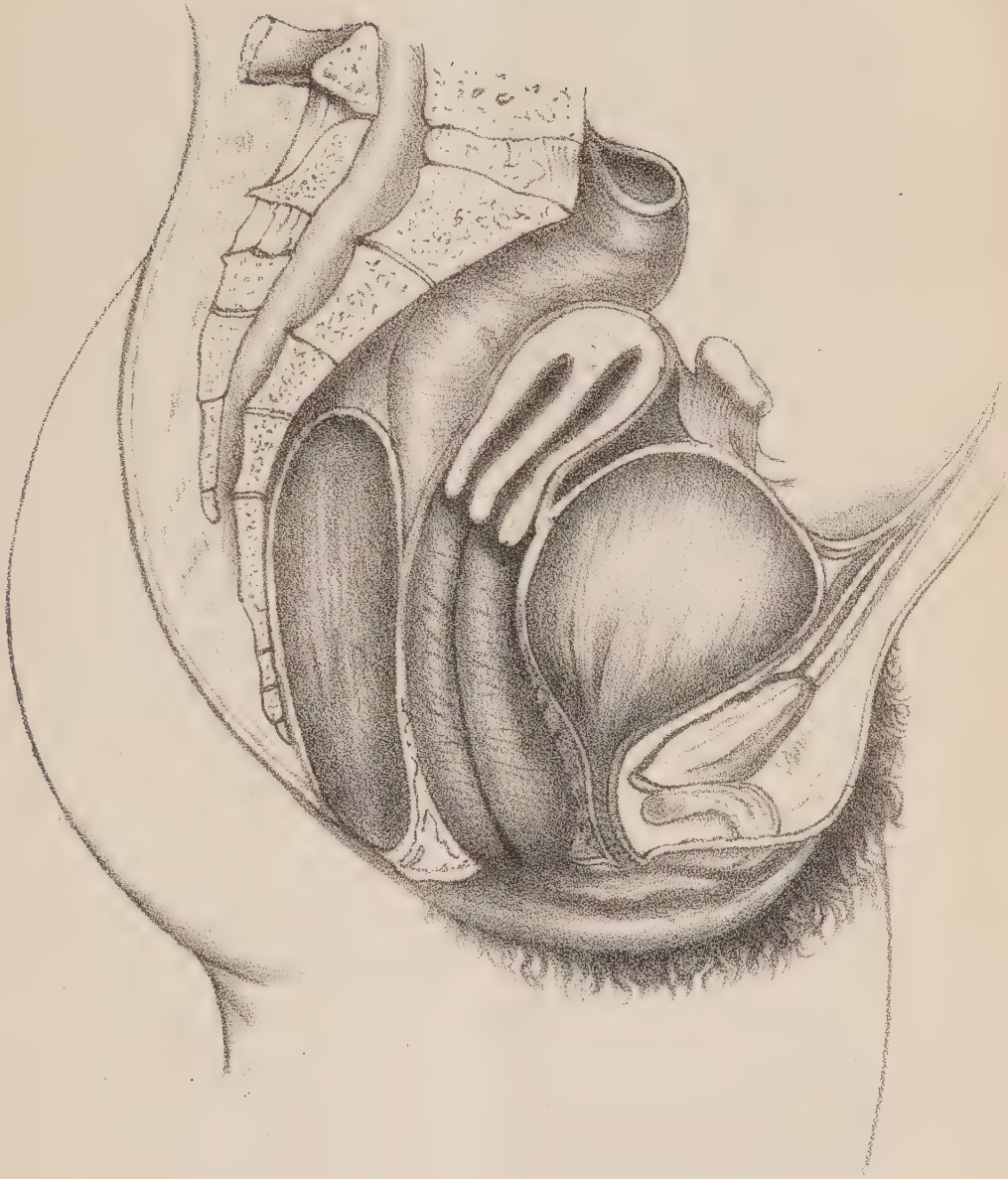
In the posterior vagina a small short cervix could be felt crowded up to the anterior superior corner of the canal, and through the os a small sound could with difficulty be passed for about an inch and a half. To determine if the uterus was divided, I passed a sound through each os, and endeavoured to touch one sound with the other, and as I failed to do this after several patient and careful trials, I think I may fairly assume that the septum exists in the uterus also.

By placing two fingers in the anterior canal against the anterior portion of the womb, and pressing the fingers of the other hand on the abdomen well down behind the uterus—*i.e.*, by the conjoined method of examination—I could make out the fundus, which appeared quite normal, and as well as I could determine there was but one ovary on each side, as would be expected. By changing the hand on the abdomen to the anterior surface of the uterus, and introducing a finger into the posterior vagina, the double cervix seemed once and a half as large as usual.

Being anxious to determine if she menstruated from both wombs, I requested her to come back during her next monthly period, and on examination with a speculum I found the catæmenial fluid flowing copiously from the anterior os, and very slowly but still distinctly from the posterior one.

The patient was not aware of anything being amiss, except the cyst, and that she suffered from dysmenorrhœa for the last year, which was owing to the stenosis existing in each os. I purposely dilated the anterior one first, without interfering with the other, when the dysmenorrhœa was much relieved, but still existed to a slight degree. I then dilated the second os, and she has been quite free from pain during the four periods that have since elapsed.

The accompanying drawing, which is fairly accurate, will convey a better idea of the case than I have been able to do by words.



Dr. MURPHY'S CASE OF DIVIDED UTERUS & VAGINA

CASE OF RECTO-VESICAL FISTULA IN THE MALE.

By D. EMBLETON, M.D.

A GENTLEMAN, aged 45, stout, a hard head-worker, and good trencherman, but lacking out-of-door exercise, complained, in December, 1869, that, during the passage of his urine, which had a sp. gr. of 1028, and let fall a deposit of pink urates and mucus, but contained no albumen, he had a tingling sensation along the urethra, and pains and irritation about the neck of the bladder; and, further, that whilst he passed his water, puffs of flatus from time to time interrupted the flow, and he had remarked that on several occasions what he thought to be small particles of fæces had passed with the urine. Once, however, what he had thought to be fæcal matter turned out to be a bit of lintseed poultice that somehow or other had got into the chamber utensil, so that the averred passage of fæces was for some time more than doubted.

These passages of supposed fæces and flatus *per penem*, he said, first began about seven years before, and their origin is ascribed to his having previously had a violent fall on a hard and cold stone surface, alighting on his nates. He has never had any venereal affection, but after, and in consequence of, the fall he had a suppurating swelling in the groin, and some time elapsed between the fall and the first passage of flatus. The discharges have occurred only at intervals of months or even years; one or the other returns, or both recur, when the bowels have been much confined and he strains at stool, or after he has taken a strong purgative. He has never to his knowledge passed either purulent or bloody matter, and no pus exists in the urine. In April, 1873, and since, these discharges have occasionally been observed. On one occasion, in the presence of Dr. Frost, whose patient he was, and myself, he passed a quantity of flatus by the penis, and several small particles of solid matter with his urine; the latter, when examined under the microscope, showed specimens of vegetable tissue such as might have belonged to cauliflower or celery, of which the patient at times partook. On later occasions, other and larger particles passed, and had an unmistakably fæcal odour. There could, then, be no doubt that these matters and the flatus had passed into the bladder from the intestine.

On examination of the rectum, there was found only an irritable and tight sphincter, no enlargement of the prostate, and no solution of continuity of the mucous membrane as far as the finger could penetrate. As the symptoms were only slight, came on at pretty long intervals, and no signs of calculus or urethral obstruction appeared, it was judged best not to interfere further than to

regulate the action of the bowels, and give occasionally chalybeates or other tonics and astringents. The patient eventually succumbed to chronic disease in other and vital organs, and no *post mortem* examination was obtained.

My venerable friend, Dr. Frost, and I had never met with a similar case—that is, we had never seen a case of intestino-vesical fistula in the male arising from such a cause as that stated, and one giving so little inconvenience. It is known that such a fistula does occur at times from an unfortunate or improper use of the instrument during catheterism, or of the knife in the operation of lithotomy, but from other causes it is comparatively rare, and on this account was thought that it might be interesting to the Society to communicate this case.

A fistula once established between the rectum and the bladder in a man, there can be no wonder that flatus and fæces should pass from the former organ to the latter, or that urine should pass from the latter to the former; but in our case there was no evidence that urine had ever passed from the bladder into the rectum. Probably the opening into the bladder had an oblique direction allowing only of the passage of matters from behind downwards and forwards, as has, in some cases, been observed after death. If this were so, it is rendered likely that the fistulous opening had commenced in the rectum and gone obliquely forwards and downwards into the bladder, which is considered to be the usual course.

How a fall on the nates could have given origin to this fistula is not easy to explain, for it is not likely to have been formed spontaneously, unless we suppose that at the time of the fall the congested rectum was overfilled with scybala, and that a small rupture of the mucous membrane had occurred from the shock, and, not healing, had ulcerated, and that the ulcer had burrowed, not downward after the manner of fistulæ in ano, but forward, causing adhesion between the bladder and the rectum, and gradually finding its way through this adhesion and thence obliquely through the wall of the bladder at its back part.

In many books there is little or no mention of male recto-vesical fistula. It is said to exist, and it is confidently asserted especially by old authors, that flatus may issue from the bladder without any fistulous communication with other organs.

The uterus, it is well known, will, at times, expel a large quantity of flatus, and an abdominal tumour, which had been taken for a pregnancy, has now and then suddenly disappeared to the relief of the patient and the surprise of the medical attendant, but we know that the uterus has a much easier and shorter way to the external air than the male bladder has. It is, however, probable that the uterus, like the intestine, may be capable itself

of liberating or of secreting gas, but I know of no well authenticated case of the bladder taking on the same action.

A case of flatus emitted from the urethra is given by the celebrated Danish anatomist, Thomas Bartholinus, in his "Acta Medic. et Philos. Hafnien." Anno 1673, vol. ii. xxxxiv., p. 135. It was communicated to him by G. W. Wedel, and is as follows: "*De flatu per penem emisso.*—Est Gothæ vir primarius, qui colicâ aliquoties per annum affligitur cum borborygmis, tensione abdominis, doloribus circa umbilicum, et flatus tunc, quod peculiare est, per penem quasi solenni consvetâ excernuntur viâ, sæpe cum sæpe sine urina. Olim adsuetus est, retinere diutius urinam, at qvosvis etiam commoratione hac, si velit, inter pocula vincere possit.'

Bartholinus adduces the then known fact of uterine flatus, and asks, why cannot the same occur in the male, either from the testicles and their vessels or from the bladder? He does not name or allude to a fistula.

Two other cases, by D. Olaus Borrichius, are given in the same work, vol. iii., p. 74. One occurred in a man, the other in a woman, and Bartholinus quotes Fernelius, Camerarius, and Schenckius as having recorded similar cases. This fistula, therefore, was well known two hundred years ago.

Howship, in his work "On Urinary Organs," 1823, p. 43, relates the case of a man, æt. 65, with abscess of the kidney, in whom was found, after death, a circumscribed inflamed spot between the contiguous surfaces of the bladder and rectum, which were adherent; in the circle of the adhesion a small passage admitting a probe from the rectum to the bladder was discovered. There had at times come a fluid fæcal matter by the urethra, and frequently flatus passing forth with an audible and most unpleasant sound.

Gant, in his work on Surgery, says that "recto-vesical fistula is not often met with," and may result as in the case given by Howship, or may be of traumatic origin.

Bryant, in his "Practice of Surgery," vol. ii., mentions four cases, and says that this fistula "is sometimes met with, and it seems probable the ulcerating process commences in the bowel and involves the bladder in a secondary way."

Only one case is found in the New Sydenham Society's Biennial Retrospects (eleven volumes), namely, in that for 1873-4, and is quoted from the "Dublin Journal of Medical Science," January, 1873. In this a tumour of the sigmoid flexure of the colon had contracted adhesion to the upper and back part of the bladder; an ulcerated opening a quarter of an inch in diameter had formed in the wall of the gut, and had passed obliquely through the wall of the bladder, giving passage by a very small opening to flatus and fæces.

The case terminated fatally; no operation was attempted.

Erichsen says that this fistula sometimes occurs, either from cancer or wound.

Dr. ANDERSON mentioned a case in which the fistula was caused by a partridge bone which the patient had swallowed. He had lately met with a case in which a prostatic abscess had simultaneously opened into the rectum and urethra, causing a fistula.

The PRESIDENT reported the case of a lady in which fæcal matter was observed in the urine, the patient at the time being in apparent good health. Some months afterwards a malignant growth was found between the bladder and rectum. In another case a fistula in ano communicated into the bladder. If a catheter were introduced into the bladder, it could be touched by a probe passed through the fistula.

A CASE OF PSORIASIS GENERALIS.

By D. EMBLETON, M.D.

John Bailiff, 19, single, barman, Waterloo Place, was admitted into the Infirmary on the 27th July, 1876. During the previous October he got wet and took cold, then came on pains of the muscles, and pain and swelling of nearly all the joints of the limbs, inclusive of the fingers and toes—in short, extensive articular rheumatism. About the end of November the disease was beginning to decline, when there supervened a scaly skin disease, commencing over the same parts that were first attacked by rheumatism, and spreading gradually over the rest and eventually over the whole body, replacing to a considerable extent the original arthritic affection.

On admission, every part of the body, even the head and face, is uniformly covered with psoriasis. He is greatly emaciated, and has to be carried about, being quite unable to move or to feed himself. His muscles are greatly wasted, and he is little more than skin and bone. The joints of the hands and feet are still swollen and tender on pressure, and effusion exists in most of them. The fingers and toes are distorted, and scarcely admit of motion; the nails deformed, rugged, and blackened; the skin covered with silvery scales, which are continually coming off in considerable quantity, exposing to view a reddened, hardened, and leathery skin. Appetite fair; bowels regular; no internal disorder can be detected. He states that he has been a sober and not a strong man, never taking more than a pint or a pint and a half of beer daily, and very little wine or spirit; never drank to excess, but lived actively in a hot and bad atmosphere, and had to keep late hours.

His mother is healthy; his father, when living, was asthmatic.

He was prescribed common diet, and a mixture of ʒiii. of bicarbonate of potass. and ʒss. of liq. arsenicalis in ℥viii. of water.

Next day, after admission (July 28th), the urine was acid, not albuminous, of sp. gr. 1022, and with excess of phosphates. The potass was omitted, and the liq. arsenicalis given alone in water and syrup. A warm bath with very highly diluted carbolic acid twice a week.

Aug. 18th. Bath discontinued, and carbolic acid lotion to be applied to the legs. After this he improved, and patches of clearing and more healthy skin began to appear on various parts. The swollen joints were now painted over with solution of nitrate of silver, gr. xl. to ʒi aq. destillat.

Towards the end of September he experienced loss of appetite and strength, costiveness, foul tongue, dull, spiritless eyes, began

to sweat much, and the legs, under the use of even carbolic acid lotion, exhaled a foul smell. He had got into a very low state; the arsenical medicine was discontinued, and instead, hydrochloric acid, with pepsine and tincture of calumba, cod oil, and half a glass of stout at dinner, were administered, and ung. picis liq. was ordered to replace the carbolic lotion, first on one leg and then on both.

A beneficial change was almost immediately observed, and at the end of October he was rapidly improving and gaining flesh and strength; the fœtid discharge had in a few days disappeared, the skin was less inflamed, and softer, and the scaly exfoliation diminished. The head and face became free from eruption, and the legs improved. Passive and then active motion of all the joints was enjoined from the first. The swelling of the joints had been much reduced by the application of the solution of nitrate of silver.

Nov. 10th. Getting better fast; general health and strength improving; new and healthy nails appearing in place of the diseased. Appetite good; bowels regular; eyes bright. Mist. ferri sesquichlor ʒi. t. d. Extension of the application of the tar ointment to all the affected parts. Cod oil, good diet, pint of stout daily. Solut. argent. nitr., as above, to joints from time to time. An axillary gland swelled and suppurated, was opened, and soon healed.

Nov. 19th. A systolic murmur first heard, and loudest, over mitral and aortic areas, but not audible at inferior angle of scapula.

Dec. 17th. Has caught cold; joints swollen and painful. A distinct but faint murmur, which is best heard at heart's apex. Two or three days of rest and warmth in bed, and a few doses of potassii iod. sufficed to stop this attack of cold and rheumatism. Previous to this date he had so far recovered the use of his limbs as to help himself in almost everything, and get up and walk about the ward, gaining daily in condition, strength, and animal spirits; the cold having passed off and the iodide being discontinued, he resumed his rapid progress towards recovery until, on January 11th, he walked out as an out-patient, his skin almost entirely free from psoriasis, a few round spots only remaining about the legs and feet: the skin had become white, soft, and pliant, and the new nails were growing normally, the muscles resuming somewhat of their former size, and the adipose tissue filling out.

On February 15th came to the hospital with scarcely a trace of his disorder, except the deformed joints of the hands and feet.

REMARKS.

Several authors mention rheumatism as a cause of psoriasis. In this case we have, it may be confidently asserted, a distinct example of the close connection of these two diseases. The psoriasis was *generalis*, not *inveterata*. When admitted, the

patient had his joints still swollen and tender, with effusions into several of them, and their motions were greatly impeded, and a short relapse occurred when he caught cold. On the decline of the acuteness of the arthritic inflammation the skin affection came on and quickly became the prominent feature of the case, and deserves, I think, the appellation of Rheumatism of the Skin.

That psoriasis is essentially and always of a rheumatic nature I will not say, but for many years I have suspected the relationship, and it ought not to be surprising that the skin should suffer from rheumatism if it be true that this disease attacks the parts which contain the white areolar tissue. In this case there appears to have occurred, I will not say a metastasis, but an extension of the rheumatic inflammation from the areolar tissues in and about the joints to that of the skin.

With regard to the cure, we cannot attribute this to the alkaline treatment with baths, or even to the arsenic, for during the time that these medicines were used (about two months) the patient gradually fell away into a state of relaxation and debility, from which he was rescued by a plan of treatment the reverse of the former, and of that usually recommended.

Perhaps the mint water, or do-nothing, treatment, would have been preferable to the alkaline, as it would probably not have given rise to the depression witnessed.

The psoriasis in this case, after a duration of eight months, disappeared almost entirely in the course of four months, counting from the time when the change of treatment was made, and the patient at the last date was going about, though lame from the effects of his arthritis.

Relapses, we know, are apt to occur both in rheumatism and in psoriasis, existing separately—another point of resemblance between them—and it is quite possible that this patient may have a recurrence of one or the other, or of both.

The lesson to be learnt from this case is, not to allow such a patient to get too low when rheumatism is declining into the chronic state, but to administer in proper time good diet, tonics, and even stimulants, and to enforce movements of the joints.

The PRESIDENT complimented Dr. Embleton on the satisfactory result of the treatment.

NOTES OF A CASE IN WHICH PARALYSIS OF CERTAIN NERVES, AND ULTIMATELY DEATH SEEMED DUE TO THE USE OF A HAIR-DYE CONTAINING LEAD.

By G. B. MORGAN.

Miss G., aged 72, was seen by me first on December 28th, 1876. She was a maiden lady of independent fortune, and lived alone. She sought advice because she found that her left eyelid drooped, and that she could not raise it except with her fingers; that she saw objects double; and that for some weeks past both her arms had been aching continuously, and that the power in them was failing day by day. She also complained of loss of appetite, and that the bowels were obstinately confined. I found her mind to be perfectly clear; that there was partial paralysis of both arms; that there was ptosis, and divergent strabismus of the left eye. I prescribed a stimulating aperient, and gave her also colchicum with bromide of potass to relieve the constant pain.

On January 5th I saw her, and sat with her for some time with the object of observing more of a case which to me was very obscure. She was very bright and lively, and appeared to enjoy having some one to chat to; her symptoms remained unaltered, and as the pain had not diminished, I ordered 7 grains of iodide of potass to be added to each dose of her mixture.

I never saw her again alive; she was found dead in her bed the following morning. I asked, and obtained leave, from her relatives when they arrived, to examine the head, as her symptoms had been certainly puzzling—perfect clearness of intellect; the special senses (except vision) unimpaired; with pain and loss of power, and wasting of both upper limbs, and evidently some leison of the third nerve. As shown by the ptosis, divergent stabismus, and double vision, I expected to find some cause of pressure on the base of the brain. I accordingly made a most careful examination, aided by the kind and intelligent assistance of Dr. Ransom, and we were both much struck by the luxuriant black hair of so old a lady. We failed to find anything abnormal either in the brain generally, or any part of it; the medulla, the pons varolii, the ventricles, and especially the third, were all apparently perfectly natural; and there was neither periosteal nor bone enlargement pressing upon any part. The circle of Willis, and the cerebral vessels, as far as we could see, were in every way healthy. We closed up the head, and felt that we had failed completely in ascertaining the cause of her symptoms, and her death.

About a week after the funeral this lady's niece called upon me to consult about her own health ; and in speaking of her aunt, she said she often wondered if a hair-dye, which her aunt had used constantly for the last fifteen years, could have affected her health. She said she made it herself by mixing a packet of sugar of lead and a packet of sulphur in some liquid. Here was possibly an explanation of the whole train of symptoms? First, lead palsy of the two upper limbs ; then of the third nerve ; and then rapid poisoning and death following the administration of iodide of potassium, on the theory advanced by Melsens that the metal in lead poisoning is an insoluble form ; that iodide of potassium unites with it, forming a soluble iodide, and that this salt is highly poisonous.

It is a pity that I had not a hint about the hair-dye before death, as there were many points omitted to be inquired into—the urine, the blue line on gums, the existence of colic, &c.—which would have made the case complete. As it is, I lay it before the Society as a curiosity.

CHLOROSIS.

By CHARLES GIBSON, M.D.,

PHYSICIAN TO THE NEWCASTLE INFIRMARY, CONSULTING PHYSICIAN TO THE NEWCASTLE DISPENSARY, ETC.

This interesting subject has engaged much thoughtful attention from a very early period; nevertheless, it comes down to us with an etiology and a pathology absolutely undetermined.

The salient feature of Chlorosis, however, is now—as it was in the times of Hippocrates, Galen, and Paul of Ægina, and of all intermediate times—the greenish or greenish-yellow colouration of the facial integument; and this colouration gave then, as it gives now, the accepted name of the affection, Chlorosis or Green Sickness.

The peculiar colouration of Chlorosis is found in dysmenorrhœa, in menorrhagia, and in amenorrhœa. It is also found in certain other conditions of bodily disorder.

Dysmenorrhœa is not a distinct disease; it is a symptom of very many forms of disease. Curiously enough, however, Chlorisis is only spoken of by Galen and other ancient physicians in connection with it. But then it is evident that the name dysmenorrhœa included different disorders of menstruation; among which may be safely classed menorrhagia and amenorrhœa. That menstruation may be painful to the utmost degree, and for prolonged periods, without any manifestation of the greenish-yellow colouration of the countenance, does not admit of a moment's question. Still, it will be admitted on all hands that in no forms of dysmenorrhœa is the chlorotic peculiarity observed except in those forms of it wherein the bodily vigour is greatly enfeebled, and wherein the blood itself is greatly impoverished. Dysmenorrhœa, then, is not often associated with Chlorosis. And even in cases wherein the association holds, the chlorotic condition is often the antecedent of the dysmenorrhœa; and when the dysmenorrhœa precedes the Chlorosis, it may be safely affirmed that the first result of it in this direction is anæmia, and that the latter is the necessary incident in the development of the Chlorosis.

The greenish pallor of the countenance is more commonly associated with menorrhagia. The persistent action of hæmorrhages, such as the menorrhagic, commonly eventuates in anæmia. And the accompaniments of the latter are debility and impairment of vital force in the central nervous systems. Thence follow depraved action of the organs of digestion and sanguification. Thence follow, too, derangements in the circulation of the blood, with imperfect and irregular contractile action of the heart and blood vessels. The organs of generation suffer; and the uterine hæmorrhages and the disturbed conditions of bodily health are maintained.

Amenorrhœa is very frequently the accompaniment of Chlorosis. The chlorotic conditions are *most commonly* observed in girls at about the period of puberty, and causes which impair greatly the general health at this period often eventuate in the production of Chlorosis. And when the latter does show itself, it is accompanied by amenorrhœa, or some irregularity in the menstrual function. Be it remembered, however, that although the constitutional effort fails to effect the menstrual hæmorrhage, or to effect it in a regular and normal manner, it may nevertheless effect the grand fact in organic female developments; the ovaries may achieve their legitimate and final function—may produce and ripen true conceptive ovules. Amenorrhœa exists, then, with Chlorosis for its accompaniment without abeyance of the procreative power. Amenorrhœa may exist, however, for an indefinite period without any manifestation of Chlorosis. In connection with this part of the subject it may be remarked that in pregnancy the menstrual hæmorrhage is suspended—that there is here a condition of amenorrhœa. But then the condition of pregnancy is a physiological one—a condition which is commonly associated with sound health. Let the pregnant woman, however, be subjected to an exhausted or wearied vitality—let anæmia come upon her, and the chlorotic manifestations will often show themselves.

The condition of Chlorosis is represented for the most part by chronicity. And here it should be noticed, that the greenish hue of the countenance is not the earliest fact in the history of the diseased condition. The Chlorosis supervenes upon an antecedent anæmia. Then there are marked exceptions to this rule of chronicity. It has been occasionally developed, almost suddenly, upon an exhaustive attack of menorrhagia. Also, after a sudden shock, as by fright. Also, upon the sudden suppression of the catamenial flow, as by a chill, &c. And it has resulted, in the course of a few days, from injury sustained by violent mental emotions alone.

And, now, let us notice that the chlorotic conditions have been found in the male sex. In delicate constitutions, on the approach of puberty, the extraordinary demand upon the strength of the individual has transcended his ability to supply it. The struggle has set up extraordinary disturbances in body and mind. Anæmia has set in, and the chlorotic manifestations have followed. The delicate constitution is often inherited; but this hereditary condition is also often supplemented by adverse influences in the rearing of youth; and not unfrequently by self-imposed sexual influences of a most deleterious character.

Whatever may be the specific item or items of causation in chlorotic diseases, one thing is certain: they are always preceded by debility. This debility, as we have already seen, often shows itself in a remarkable manner about the time of puberty, whether

it is the result of hereditary transmission or not. The organs of digestion, of sanguification, and of nutrition are unequal to the work of building up the body in a healthy and robust manner, to the stature of adult life. And this debility may show itself at ulterior periods of sexual activity as the consequence of accident or of disease.

The impairment of the function of sanguification—wherever or however that function may be performed—is a remarkable fact in the history of Chlorosis; a fact which is only secondary in the matter of time to that of the invariable presence of debility. Too little blood is formed: the blood contains too little solid matter—too little fibrine—too few corpuscles—too little iron. The circulation of the blood becomes correspondingly impaired, and nutrition is essentially and inevitably unhealthy. The organs of secretion, of excretion, and of innervation suffer accordingly.

The outcome of all this is degeneration of the bodily structures which necessitates deterioration of the general health. There is loss of flesh and fat—there is relaxation of the tissues and langour in all their actions. The heart beats fitfully, the blood vessels are irregularly supplied and imperfectly distended with blood, the thinner parts of the blood exude through the walls of the flaccid vessels. The lungs suffer in due course. They receive and retain blood irregularly. The muscles of respiration act languidly, there are present apnœa and dyspnœa. The central organs of the nervous system execute their work unhealthily, volition is performed in a perfunctory manner, and the receptivity and the activity of the whole of these organs are impaired.

The conditions which we have now before us belong to anæmia, or more properly to oligæmia. Here we have the same bruits of the heart and vessels of the neck; the same flaccidity and loss of flesh; the same palpitations and faintings; the same langour and debility; and the same conditions of the blood; as we have in Chlorosis. Chlorosis does not exist without anæmia. But in the most profound anæmias—even in *idiopathic anœmia* up to the very moment of dissolution—Chlorosis does not present itself necessarily; does not present itself, in fact, unless the disease occurs in such wise that disturbance of the organs of generation is allied with the anæmic condition. It is true that Chlorosis generally, almost invariably, occurs in females. But it does, as we have seen, occur in males; and we have, in explanation of the great rarity of such occurrence, to remember the more delicate organisation of the woman as a whole, and the less robust character—if the expression may be allowed—of her blood in particular. Chlorosis, then, is an anæmia; but it is an anæmia which is of necessity associated with disturbance in the functions of the organs of generation.